

GAO

Briefing Report to the Honorable
Leon E. Panetta, House of
Representatives

May 1988

AGRICULTURAL TRADE

Causes and Impacts of Increased Fruit and Vegetable Imports



042168



**Resources, Community, and
Economic Development Division**

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May 10, 1988

The Honorable Leon E. Panetta
House of Representatives

Dear Mr. Panetta:

In an October 22, 1986, letter, you asked us to evaluate how extensive the rise in farm imports had been in the recent past and its impact on American farmers and food manufacturers. You expressed a particular interest in fruit and vegetable imports. In subsequent discussions with your office, we were asked to address the causes, as well as the impacts, of the rising trend in fruit and vegetable imports.

In recent years, concern has been growing about how the United States can best compete in an increasingly global economy--an economy characterized by the accelerating flow of commodities and capital across national borders. World agricultural output expanded greatly in the 1980-86 period, fueled by accelerated improvements in technology and government export subsidies and pricing policies. From 1980 through 1986, the period on which we focused our review, the U.S. agricultural trade surplus (adjusted for price changes and exchange rate fluctuations) decreased from about \$19 billion to about \$5 billion, a result of declining exports and rising imports. The rise of imports has been particularly notable in the fruit and vegetable industries due to large increases in several commodities, including frozen concentrated orange juice and frozen broccoli.

This briefing report, as summarized below, provides an overview of the extent to which fruit and vegetable imports rose during the 1980-86 period; factors contributing to the rise; and the impact of increased fruit and vegetable imports on consumers, producers, processors, and distributors. Also, as requested and as agreed with your office, legislative provisions related to import relief are listed in appendix I.

EXTENT OF THE RISE OF FRUIT AND VEGETABLE IMPORTS

Section 1 of this briefing report discusses characteristics of the trend of increased fruit and vegetable imports during

IMPACTS OF THE RISE

Section 3 discusses the domestic economic impacts of the rising trend of fruit and vegetable imports. While the overall impacts are complex and vary considerably among commodities and economic sectors, several broad patterns did appear. In general, imports had the following economic impacts:

- Consumers benefited from increased fruit and vegetable imports in terms of greater supplies, greater variety, and, in some markets, lower prices. However, concerns have been raised regarding pesticides used on imports. For example, in a 1986 report, Pesticides: Better Sampling and Enforcement Needed on Imported Food (GAO/RCED-86-219), we concluded that the Food and Drug Administration's monitoring program provided little protection against public exposure to illegal residues in imported food.
- Some domestic producers may have been adversely affected by competition from rising imports, when such imports contributed to production cutbacks and the costs of shifting to alternate crops.
- Domestic processors were adversely affected in some cases and benefited in others depending, in part, on whether the imports were finished or unfinished products. While some processed imports, such as canned tomatoes, competed directly with domestic processed products, others, such as frozen concentrated orange juice, had to undergo additional processing before being marketed and thus provided additional supplies for U.S. processors.
- Distributors benefited because they were able to expand their marketing beyond the normal domestic production period and distribute on a year-round basis.

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Our work was done primarily between November 1986 and November 1987, in Washington, D.C., California, Florida, and Washington State. We focused our review on fruit and vegetable imports, using data primarily covering the 1980-86 period. However, data from earlier time periods are occasionally used in this briefing report to show longer term trends, and 1987 data are used where available. During our review, you asked us to provide a fact sheet showing

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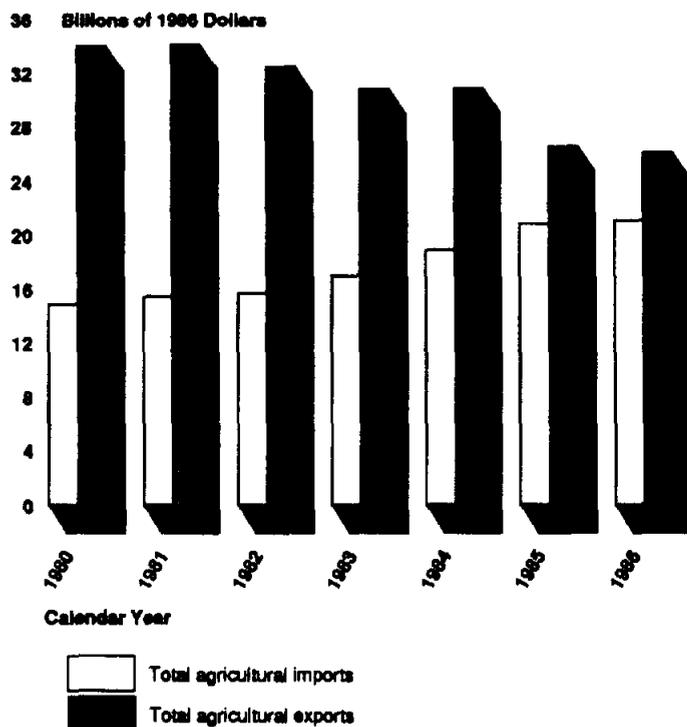
SECTION 1
RISE OF FRUIT AND VEGETABLE
IMPORTS FROM 1980 THROUGH 1986

SUMMARY

The U.S. agricultural trade surplus decreased during the 1980-86 period, a result of both declining exports and rising imports. For the fruit and vegetable industry, the rise in imports was particularly great. From 1980 through 1986, the trends in imports were as follows:

- Vegetable imports more than doubled in real value (adjusted for price changes and exchange rate fluctuations) rising from about \$738 million to about \$1.6 billion, and fruit imports more than tripled in value, rising from about \$482 million to about \$1.6 billion.
- The import share of the U.S. market for major fresh and frozen fruits rose from about 26 percent to about 33 percent; the share for major fresh vegetables rose from about 5 percent to about 7 percent.
- Imports of frozen concentrated orange juice, fresh and frozen broccoli, fresh and processed tomatoes, and table grapes accounted for about half of the rise in fruit and vegetable imports. Mexico, Chile, and Brazil were major suppliers of these commodities.

Figure 1.1: Value of U.S. Agricultural Imports and Exports, 1980-86



Note: The Commerce Department's unit value indexes for agricultural imports and exports were used to convert nominal dollar values to their 1986 equivalent. Export values may be understated due to possible underreporting of U.S. exports to Canada.

Source: Developed from data in Foreign Agricultural Trade of the United States (FATUS), Calendar Year 1985 and 1986 Supps., Economic Research Service (ERS), USDA.

Figure 1.2 shows estimated quantities for agricultural imports and exports from 1980 through 1986.³ Imports rose from 15.8 million metric tons (MMT) in 1980 to 18.7 MMT in 1986, while exports fell from about 140 MMT to 105 MMT during this period.

³Quantities for 1987 were not available.

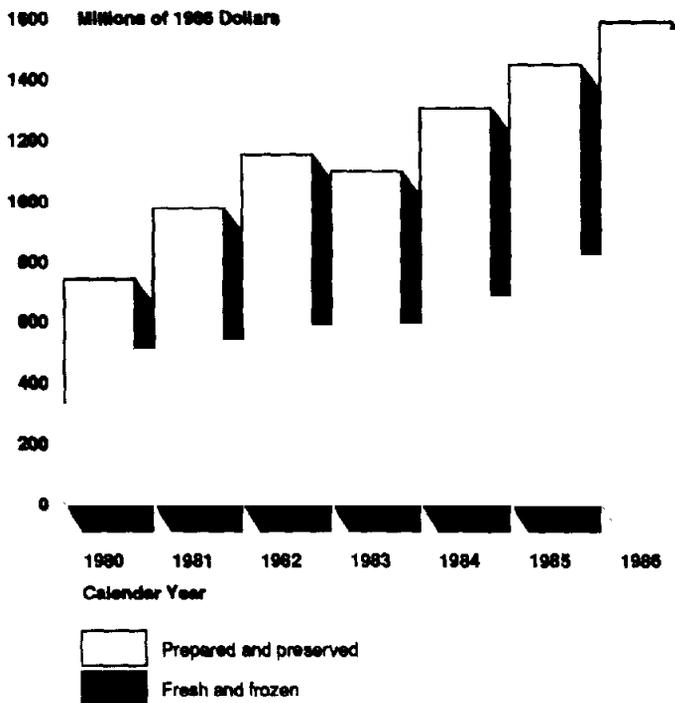
volume and 40 percent of the value of total agricultural imports. Competitive imports, such as most fruits and vegetables, animal products, grains, and sugar, comprise the remaining 70 percent of the food imports by volume and 60 percent by value. Since 1980, total import values rose largely because competitive imports made inroads into the U.S. market.⁵

TOTAL FRUIT AND VEGETABLE IMPORTS ROSE
FASTER THAN TOTAL AGRICULTURAL IMPORTS

Although agricultural imports as a whole generally increased from 1980 through 1986, total fruit and vegetable imports rose more rapidly than total agricultural imports. In 1986 U.S. dollars, fruit imports increased from about \$482 million in 1980 to almost \$1.6 billion in 1986--over a threefold increase. As figure 1.3 shows, most of the rise during the period was due to increased juice imports, primarily orange juice. Fresh and frozen fruit imports climbed gradually, as did prepared and preserved fruit imports.

• ⁵An exception occurred in 1986, when the increase in imports was due largely to high prices for coffee imports, classified by USDA as noncompetitive.

Figure 1.4: Value of Vegetable Imports, 1980-86



Note: Current values adjusted to 1986 dollars using the unit value index of agricultural imports.

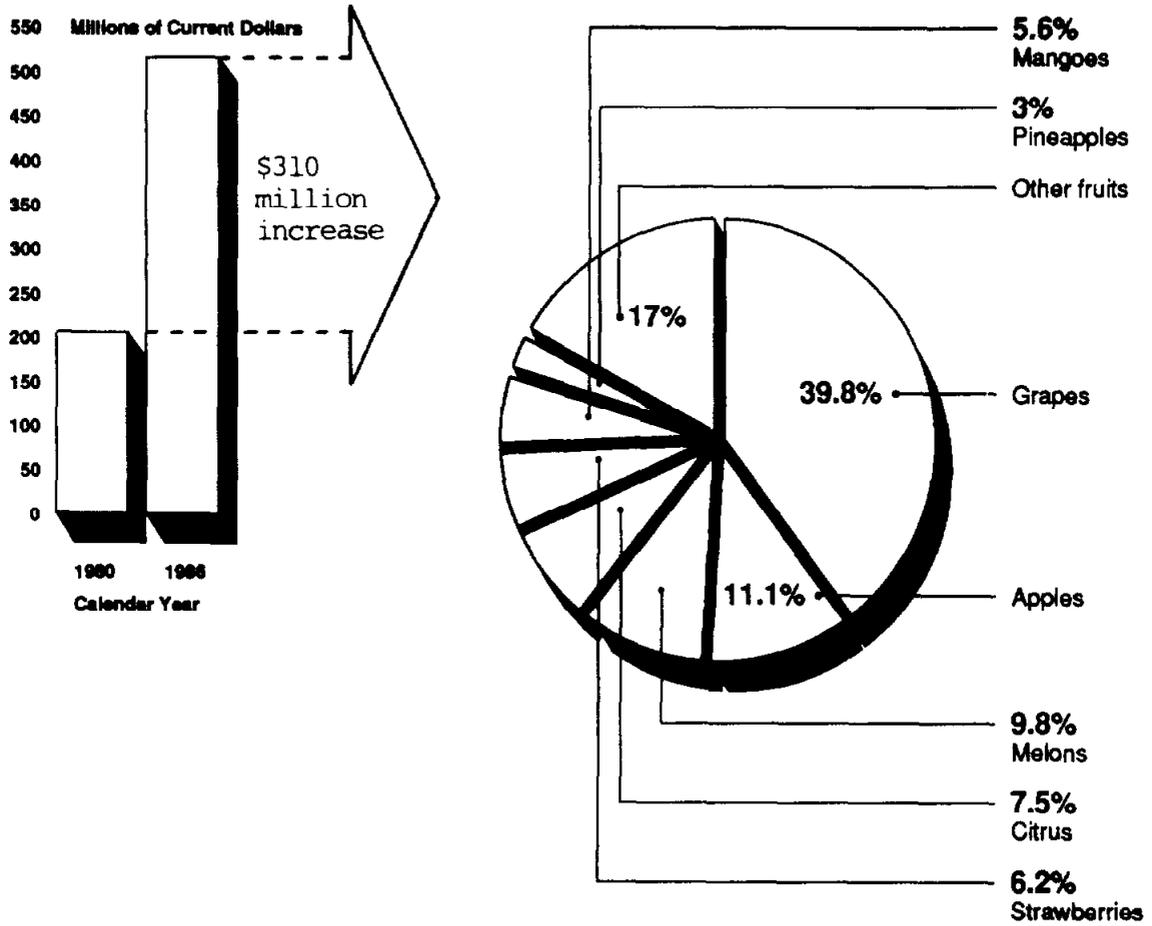
Source: Developed from data in U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1981 and FATUS, Calendar Year 1985 and 1986 Supps., ERS, USDA.

IMPORTS OF SOME FRUITS AND VEGETABLES INCREASED MORE THAN OTHERS

Certain fruits and vegetables accounted for a greater share of increased imports than others did. For example, major increases were reported for frozen concentrated orange juice, fresh and frozen broccoli, fresh and processed tomatoes, and table grapes. Figure 1.5 shows the degree to which various commodity groups accounted for the rise in total fruit and vegetable imports from 1980 to 1986. As shown, fruit juices accounted for almost a third, or \$557 million, of the \$1.7 billion increase.⁶ Fresh and frozen vegetables accounted for over a quarter, or \$440 million, of the increase, while fresh and frozen fruit and prepared and preserved vegetables accounted for about 18 percent and 16 percent, respectively, of the increase.

⁶Over half the fruit juice increase was due to the rise in frozen concentrated orange juice imports.

Figure 1.6: Increase in Fresh and Frozen Fruit Imports, in Total and by Specific Commodities, 1980-86



Note: Does not include fruit juice or prepared and preserved fruit imports.

Source: Developed from data in FATUS, Calendar Year 1981 and 1986 Supps., ERS, USDA.

Table 1.1: Profile of Selected Commodities, 1980 and 1986

<u>Commodity and year</u>	<u>Import volume (mil. lbs.)</u>	<u>Import value (mil. of current \$)</u>	<u>Import market share^a (%)</u>	<u>Per capita consumption (lbs.)</u>	<u>Chief source</u>
Fresh tomatoes					Mexico
1980	652.0	131.4	21.3	13.4	
1986	981.0	334.8	23.6	17.2	
Fresh broccoli					Mexico
1980	0.7	0.1	0.2	1.6	
1986	8.5	0.9	1.1	3.5	
Frozen broccoli ^b					Mexico
1980	30.1 ^c	6.9	9.1	1.4	
1986	155.8 ^c	34.5	38.6	1.7	
Table grapes					Chile
1980	98.1	39.4	11.7	3.7	
1986	456.6	162.7	26.1	7.2	
Frozen concn. orange juice					Brazil
1980	289.2	66.6	14.1	9.0	
1986	1477.5	386.6	53.7	11.4	

^aImport shares are calculated as imports (in millions of pounds) as a percentage of total domestic utilization (in million of pounds). (Utilization includes all supplies available for consumption—domestic production plus imports less exports.)

^bThe changes from 1980 to 1986 of frozen broccoli imports may be understated due to the omission of the sliced broccoli-cauliflower-okra import category (TSUSA 1380520), which rose from about 2.4 million pounds to 8.7 million pounds in the 1980-86 period.

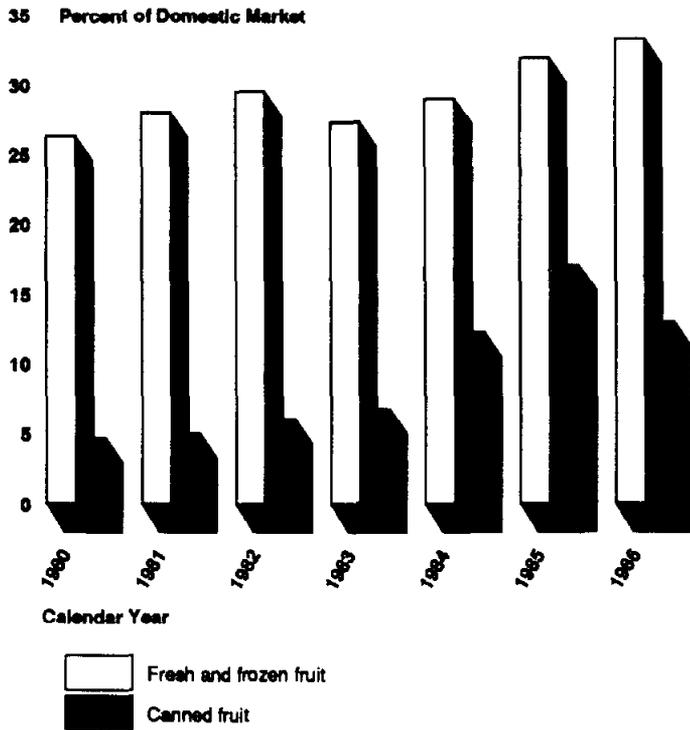
^cFresh weight basis.

Source: Developed from data in FATUS, Calendar Year 1986 Supp., ERS, USDA; and data supplied by staff at ERS and the Foreign Agricultural Service, USDA.

IMPORTS PLAYED AN IMPORTANT ROLE IN SOME DOMESTIC MARKETS

On a regional and seasonal basis, and for certain commodities, imports played a major role in domestic markets. For example, Mexico is the major foreign supplier of fresh vegetables to the U.S. market during the winter, accounting for about 50 percent of U.S. supplies at that time. Mexican-produced winter vegetables include tomatoes, cucumbers, peppers, eggplant, squash,

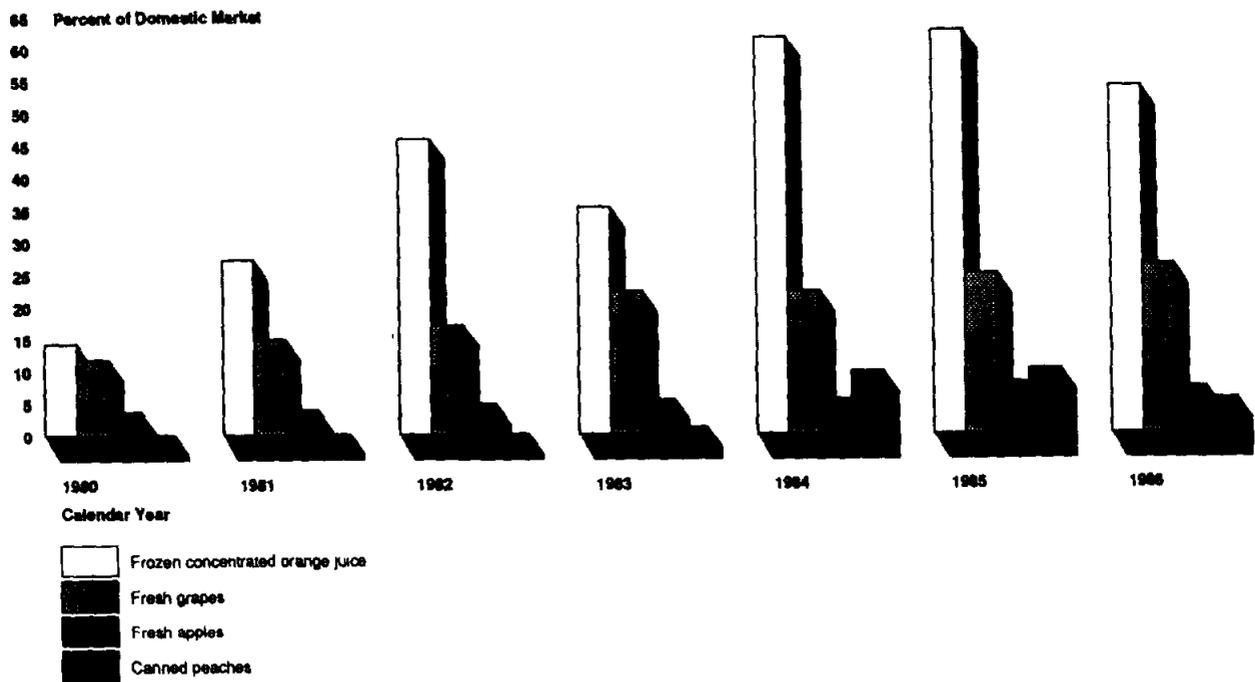
Figure 1.8: Import Shares of U.S. Fresh, Frozen, and Canned Fruit Markets, 1980-86



Note: Major fresh and frozen fruits include frozen concentrated orange juice, bananas, grapes, apples, pineapples, peaches, and pears.

Source: Developed from data supplied by staff at ERS, USDA.

Figure 1.10: Import Shares of Selected U.S. Fruit Markets, 1980-86



Note: Percentages are based on import and total domestic consumption quantities.

Source: Developed from data supplied by staff at ERS, USDA.

SECTION 2
WHY FRUIT AND VEGETABLE IMPORTS
HAVE INCREASED

SUMMARY

A number of economic and demographic developments converged in the 1980-86 period to help bring about the rise in U.S. fruit and vegetable imports. While not applicable to every commodity, together the following six factors help explain why fruit and vegetable imports increased:

- lower production costs abroad;
- rise in the dollar's exchange rate against the currencies of countries that export fruits and vegetables to the United States;
- actions by foreign governments, such as subsidizing production costs;
- bad weather and crop disease that resulted in reduced supplies of domestic commodities;
- increasing globalization of agriculture with expanded flows of commodities and capital across national borders and increased agricultural production worldwide; and
- demographic and lifestyle changes in the United States that resulted in increased consumer demand for fruits and vegetables.

costs. For example, in 1986 average agricultural wage rates were the equivalent of about \$3 a day in Mexico, compared with over \$3 an hour in the United States.² This difference in wage costs apparently widened during the 1980-86 period. While U.S. rates remained relatively constant during this period, Mexican agricultural wages fell from an equivalent of about \$6 a day in 1980 to around \$3 a day in 1986.

Broccoli is one industry where lower Mexican production costs (notably, labor) may have been a significant factor contributing to the rise in imports during the 1980s. According to a University of California Cooperative Extension study, The Frozen Vegetable Industry of Mexico, the direct cost of producing broccoli in 1986 was estimated to be 4.6 cents a pound in Mexico (produced at a yield of 3.66 tons an acre), compared with 13.6 cents a pound in the Salinas Valley of California (at a yield of 4.5 tons an acre).

Differences in labor costs accounted for much of the disparity in production costs. For example, according to the University of California study, higher irrigation costs of \$118 an acre in the United States were caused primarily by the large wage cost differential (i.e., differences in costs of labor involved in irrigation): 40 cents an hour in Mexico versus \$10.15 an hour in the United States. Further, a large harvest labor cost advantage in Mexico accounted for much of the \$307-an-acre difference in harvest and transport costs. In 1986 the average wage paid agricultural workers in broccoli production in Mexico equaled about \$3 a day, compared with over \$3 an hour in the United States.

The study also found significant cost advantages for Mexican producers in terms of fertilizers, chemicals, and electricity for irrigation. The difference in energy costs for pumping water, for example, was \$106 an acre. Fertilizer costs were \$115 an acre lower in Mexico than in the United States. Other studies indicate that similar cost advantages existed for Mexican tomato production and processing.³

²A more meaningful measure of relative labor costs is wages per unit of output. However, these data were not available.

³See, for example, Katharine Buckley, John VanSickle, Maury Bredahl, Emil Belibasis, and Nicholas Gutierrez, Florida and Mexico Competition for the Winter Fresh Vegetable Market, ERS, USDA, June 1986; and Kirby Moulton, The Processing Tomato Industry in Mexico, University of California Cooperative Extension, July 1984.

counterparts. The Brazilian orange juice industry has been developed with the participation of the U.S. industry. During the early 1980s, for example, the bulk of Brazil's juice extractors were leased from an American-owned firm. In addition, evaporators and several other pieces of machinery were purchased from and installed by U.S. firms. As a result, the Brazilian industry had access to the latest technology in orange juice processing.

We believe that U.S. orange juice processors have not, therefore, had the technological advantage necessary to offset Brazil's labor cost advantage in fruit production, harvest, and haul. As table 2.1 shows, the costs of processing oranges into juice concentrate were about the same in Brazil and Florida during the 1986-87 season: 23 cents a pound versus 20 cents a pound, respectively. The most significant differences were in the cost of fruit production (20 cents a pound in Brazil versus 92 cents a pound in Florida) and picking and hauling, where Brazil's costs were about one-third of Florida's (9 cents versus 26 cents, respectively).

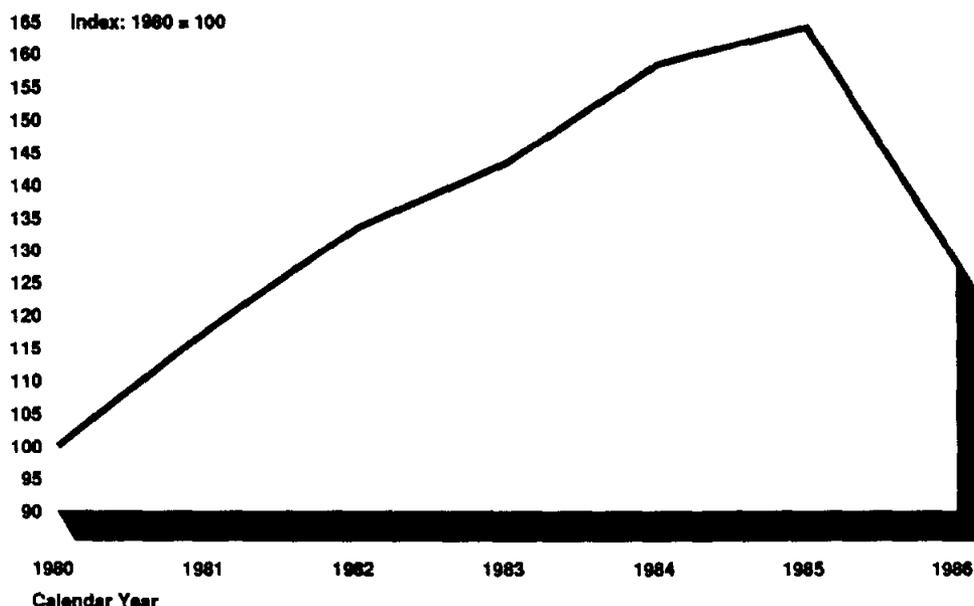
Table 2.1: Estimated Frozen Concentrated Orange Juice Production Costs for Brazil and Florida, 1986-87
(Dollars per Pound of Frozen Concentrated Orange Juice)

<u>Cost component</u>	<u>1986-87 season</u>	
	<u>Brazil</u>	<u>Florida</u>
Fruit	.20	.92
Pick and haul	.09	.26
Processing	.23	.20
Taxes	<u>.07</u>	<u>n/a</u>
Total cost	.59	1.38
Less byproducts	<u>.07</u>	<u>.04</u>
Net cost	.52	1.34
Transportation	.07	.01
Tariff	<u>.34</u>	<u>n/a</u>
Total cost	<u>.93</u>	<u>1.35</u>

n/a--not applicable.

Source: Florida Citrus Outlook, 1986-87 Season, Market and Economic Research Department, Florida Department of Citrus, Oct. 29, 1986.

Figure 2.2: U.S. Trade-Weighted Exchange Rate, 1980-86



Source: Economic Report of the President, Jan. 1987.

However, fruit and vegetable imports, and agricultural imports in general, did not decline significantly as the (trade-weighted) value of the dollar fell in 1986. This is partly because, although the dollar fell against the currencies of several important trading partners such as Germany and Japan, it did not fall, but continued to rise, against the currencies of several major agricultural exporters, such as Mexico, Brazil, and Chile.

Figure 2.3 shows trends in the dollar's exchange rates against the currencies of the countries/regions accounting for most of the rise in fruit and vegetable imports from 1980 through 1986. These were the Mexican peso, the Chilean peso, the Brazilian cruzado, and the combined currencies of the European Community (EC) countries as measured by the "European currency unit" (ECU).⁶ The dollar began to fall against the ECU in 1985, while it has continued to strengthen against the currencies of the Latin American agricultural exporters. It is important to note, however, that the exchange rates for the Mexican and Chilean pesos and the Brazilian cruzado in figure 2.3 are expressed in nominal terms.

⁶The ECU is defined as a basket of currencies composed of specific amounts of the currencies of the member countries of the EC, excluding Greece prior to 1984 but including Greece thereafter. The EC includes Belgium, Denmark, the Federal Republic of Germany, France, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain (including the Canary Islands), and the United Kingdom.

to the dollar. The import effects of a rise in the dollar against a trading partner's currency, such as the Mexican peso, may also be offset if the currency of another importing country rises to a greater degree against the peso, thereby shifting Mexican exports to that country's markets.

Some countries peg their currencies to the value of the U.S. dollar to prevent exchange rate fluctuations from affecting their terms of trade. When this policy is followed, the impact of exchange rate fluctuations on the effective cost of imports from these countries may be minimized. However, many of the exporters of fruits and vegetables to the United States follow more flexible exchange rate arrangements under which the exchange rate, which may normally be pegged to a "basket" of trading partner currencies, is frequently adjusted on the basis of a range of economic indicators. A change in the exchange rate may influence imports from a country that pegs its currency to the U.S. dollar if the change has the effect of making U.S. imports from other competing exporters relatively more or less attractive.

FOREIGN GOVERNMENT ACTIONS HELPED IMPORTS COMPETE IN U.S. MARKETS

Foreign government actions, such as export and production cost subsidies and other export promotion programs (which the United States also uses in the case of some export commodities), acted in some cases to help fruit and vegetable imports compete in U.S. markets.⁷ Such actions may increase U.S. imports unless they are offset by counteracting U.S. policies. Examples of import commodities that may have been made more competitive due to foreign government actions include processed tomatoes from the EC and frozen concentrated orange juice from Brazil. In the case of Brazil, subsidies were instituted as part of a policy to expand exports in order to generate foreign exchange earnings.

EC Subsidies for Processed Tomatoes

Industry analysts attribute the rise in processed tomato imports to EC actions, as well as to U.S. policy actions.⁸ From 1965 through 1980, imports of processed tomato products generally ranged between 1 percent and 5 percent of the domestic market.

⁷Under the rules of the General Agreement on Tariffs and Trade (GATT), agricultural subsidies are permitted as long as they do not result in a country's gaining more than an equitable share of world trade in the subsidized product.

⁸In 1986 the EC countries of Italy, Spain, Greece, and Portugal provided about 63 percent of the volume of processed tomato imports (including paste and sauce). The rest came primarily from Israel, Mexico, and Taiwan.

Table 2.2: Tomato Processor Product Costs for California and Selected Exporting Countries, 1985

(U.S. Dollars per Ton)

<u>Country</u>	<u>Minimum grower price</u>	<u>Processing subsidy</u>	<u>Foreign processor cost</u>	<u>California price</u>	<u>Difference between foreign and California costs</u>
Italy	71.7	27.6	44.1	54	-9.9
Greece	60.8	19.3	41.5	54	-12.5
Spain	40-80	7.2% ^a	40-80	54	-14/+26
Turkey	25.0	5-7% ^a	25.0	54	-29.0
Mexico	55.0	n/a	55.0	54	+1.0

^aThese figures represent export subsidies, which are a percentage of the value of the processed product.

Source: Kirby Moulton and Leon Garoyan, An Update of Global Processing, Tomato Production and Trade, University of California Cooperative Extension, May 1986; Kirby Moulton and Leon Garoyan, The Processing Tomato Industry in Turkey, University of California Cooperative Extension, Jan. 1987; and Kirby Moulton, The Processing Tomato Industry in Mexico, University of California Cooperative Extension, July 1984.

Of the three EC countries, processors in Italy and Greece paid higher grower prices than processors in California did. The processing subsidy, however, more than offset this cost difference. In Spain processor costs ranged from \$14 lower than U.S. costs to \$26 higher, but Spanish processors received a 7.2 percent export subsidy (equivalent to about \$6 a ton of raw product equivalent for tomato paste and \$16 a ton for peeled tomatoes). Processor subsidies, therefore, may have given EC tomato exports a competitive advantage despite their relatively high production costs.⁹ Turkey was the only country showing a clear production cost advantage over U.S.-based production during 1985. Mexican costs were about the same as California's.

Brazilian Subsidies for Frozen Concentrated Orange Juice

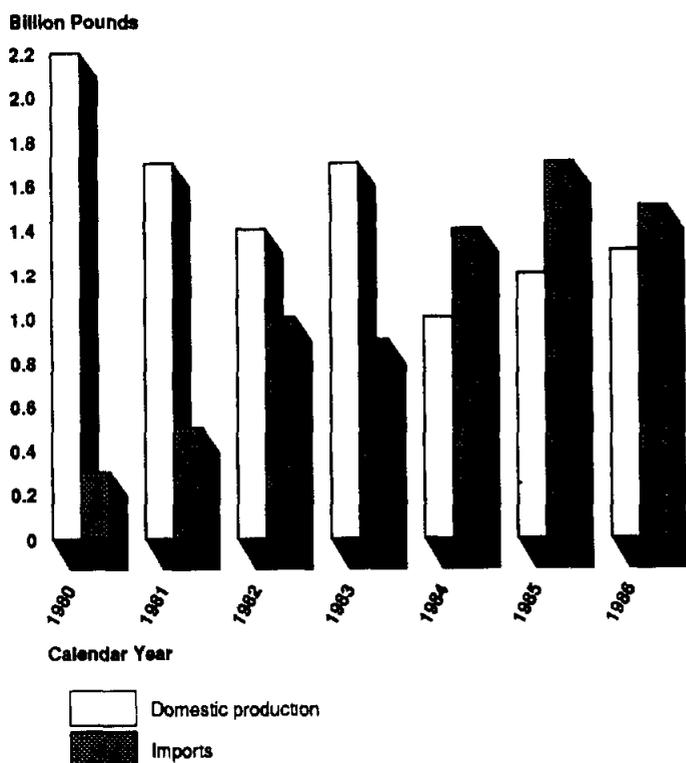
The Brazilian frozen concentrated orange juice industry's efforts to increase its exports to the United States during the 1980-86 period were supported by a wide range of Brazilian federal and state government actions and programs. Government assistance available to citrus growers and processors included the following:

⁹These figures do not represent the final price to U.S. importers, which may include additional subsidies or tariffs.

Rise of Frozen Orange Juice
Imports from Brazil

The dramatic rise in frozen concentrated orange juice imports from Brazil is a notable example of import expansion brought on by domestic shortfalls due to bad weather and crop disease. Figure 2.5 shows the rise in total frozen concentrated orange juice imports, over 95 percent of which came from Brazil during the 1980-86 period.

Figure 2.5: U.S. Imports of Frozen Concentrated Orange Juice, 1980-86



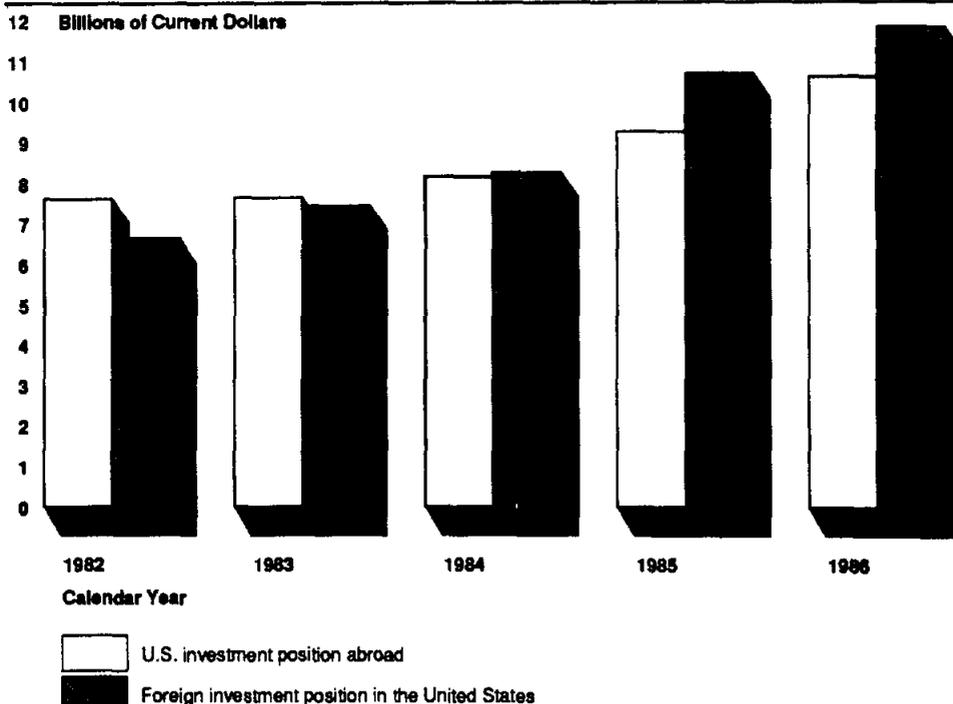
Source: Developed from data supplied by staff at ERS, USDA.

A series of freezes, beginning in the 1980-81 season, caused serious reductions in Florida's citrus supplies. In 4 of the first 5 years of the 1980s, freezes destroyed 13 to 31 percent of Florida's orange crop. According to the Executive Director of the Florida Department of Citrus, widespread destruction of orange trees due to the freezes resulted in a 40-percent decrease in the citrus crop and a 21-percent loss of orchards between the 1980-81 and the 1984-85 growing seasons.

Problems worsened for Florida growers when citrus canker was discovered in Florida during 1984. Canker has been hampering

the direct investments abroad of U.S. food firms with the trend of direct investments of foreign food firms in the United States.¹⁰ The rising trend of international capital flows in the food industry provides some evidence of the increasing globalization of agriculture.¹¹

Figure 2.6: U.S. Direct Investment Abroad and Foreign Direct Investment in the United States in the Food Industry, 1982-86



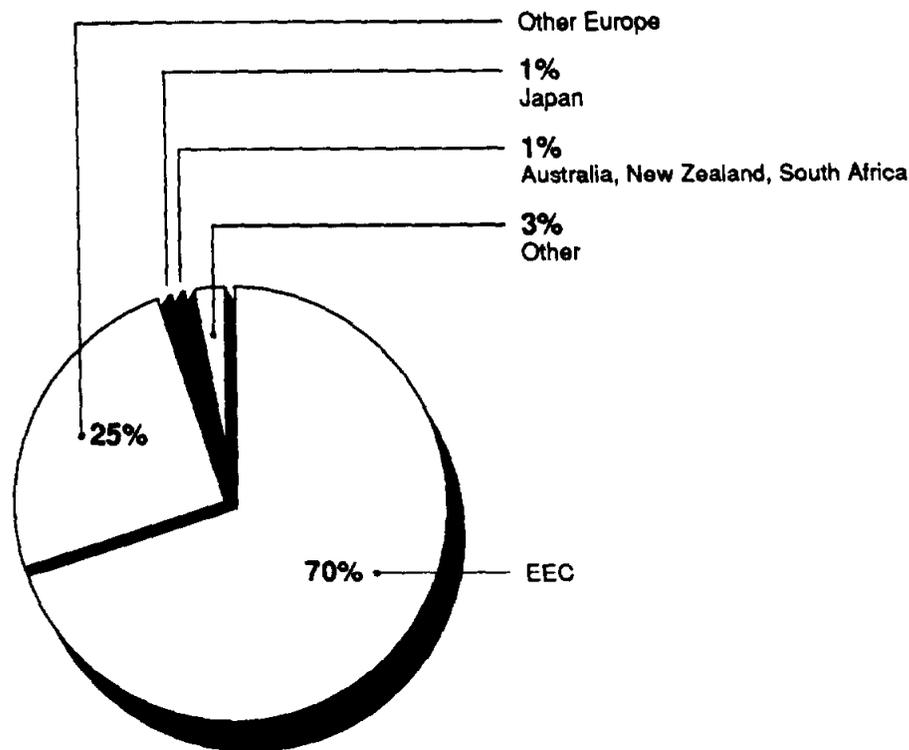
Source: Survey of Current Business, Bureau of Economic Analysis, U.S. Department of Commerce, Aug. 1987.

Most of the increase in the U.S. companies' direct investment position abroad for all agricultural products from 1982 through 1986 was the result of increases in their investments in EC countries. Figure 2.7 shows the U.S. food companies' direct investment position abroad in selected countries and regions from

¹⁰The measure used here is the "direct investment position" as reported by the Department of Commerce's Bureau of Economic Analysis. These data measure parent companies' contributions to the total assets of their foreign affiliates, or the debt or equity financing provided by parents to their affiliates. More specifically, the "position" is equal to the parent companies' equity in, and net outstanding loans to, their foreign affiliates.

¹¹Foreign investment data relating specifically to the fruit and vegetable industries were not available.

Figure 2.8: Foreign Investment Position in the U.S. Food Industry by Country and Region, 1986

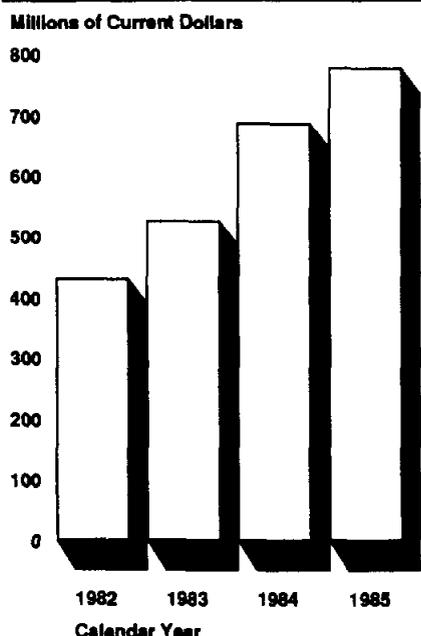


Source: Survey of Current Business, Bureau of Economic Analysis, U.S. Department of Commerce, Aug. 1987.

Another source of information on the U.S. food industry's foreign capital investments is the financial data reported by U.S. firms to the U.S. Securities and Exchange Commission. Annual company financial reports for the 1980-86 period indicate the growing importance of foreign operations to U.S. firms in the food industry. Figure 2.9 presents data on foreign assets for the top 10 food firms from 1980 through 1986.¹² These data show the 10 firms' foreign assets rising as a percentage of total assets from 1983-84 to 1986.

¹²The 10 companies are Campbell Soup Company; General Foods Corporation; Kellogg Company; Quaker Oats Company; RJR Nabisco, Inc.; Sara Lee Corporation; Kraft Inc.; Borden, Inc.; IC Industries, Inc.; and Seaboard Corporation.

Figure 2.10: U.S. Food Imports Shipped by Foreign Affiliates of U.S. Companies, 1982-85



Source: Bureau of Economic Analysis, U.S. Department of Commerce.

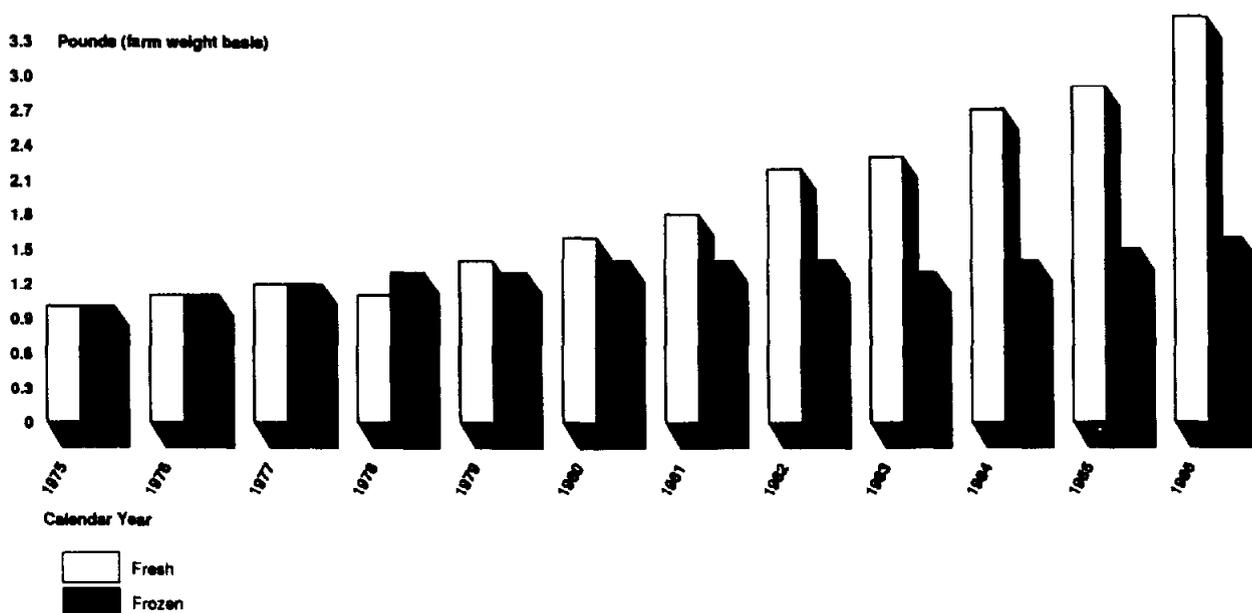
Investments by U.S. firms in broccoli production and processing operations in Mexico provide an example of U.S. investments abroad that contributed directly and indirectly to the rise in imports. According to a study by the University of California Cooperative Extension, these investments generally took one of two forms: (1) a contract commitment or (2) actual ownership. Most large broccoli growers in Mexico contract with U.S. multinational corporations on a continuing basis. In 1985 over 50 percent of the broccoli output of Mexico was processed by firms with substantial U.S. equity interest. Few of the Mexican operations, however, were wholly U.S.-owned, as Mexican regulations generally limited foreign equity ownership to 49 percent during the 1980-86 period.¹³

Another example of U.S.-owned firms investing in production/processing abroad is the recent decision by Coca Cola Foods to purchase about 700,000 acres in Belize, a country in Central America, where the firm will plant a 25,000 acre citrus grove, with the products to be marketed through the firm's Minute Maid brand. The imports from this venture will likely compete with Florida frozen orange juice concentrate production. The Caribbean Basin Initiative provided a major incentive for this venture.

¹³Under current law, the Mexican government can raise this limitation in specific cases judged to be in the interest of the Mexican economy.

fruits and vegetables.¹⁴ Figure 2.11 compares the trends in per capita consumption of fresh and frozen broccoli from 1975 through 1986. While per capita consumption of fresh and frozen broccoli remained about equal during the second half of the 1970s, fresh broccoli consumption increased more rapidly during the 1980-86 period. Fresh broccoli consumption rose 119 percent from 1980 through 1986 (from 1.6 pounds to 3.5 pounds per capita), while frozen broccoli consumption rose less than 20 percent (from about 1.4 pounds to over 1.6 pounds per capita) during this period.

Figure 2.11: U.S. Per Capita Consumption of Broccoli, 1975-86



Source: Vegetable Situation and Outlook Report, ERS, USDA, Aug. 1987.

Figure 2.12 compares the trend in U.S. per capita consumption of fresh broccoli with that of other fresh vegetables from 1980 through 1986. Although fresh broccoli showed the highest increase, per capita consumption of all fresh vegetables rose 11.4 percent (from 80.7 pounds to 89.9 pounds). Tomato consumption rose about 28 percent during this period (from 13.4 pounds per capita in 1980 to 17.2 pounds per capita in 1986).

¹⁴ Consumption, as used in this report, is a residual category calculated as domestic production plus imports less exports.

SECTION 3

ECONOMIC IMPACTS OF INCREASED FRUIT
AND VEGETABLE IMPORTS FROM 1980 THROUGH 1986

SUMMARY

While the overall impact of increased fruit and vegetable imports is complex and varies considerably among commodities and economic sectors, several broad patterns emerge. In general, the information we obtained, although not conclusive, indicated that increased imports from 1980 through 1986 were

- beneficial to consumers and distributors;
- beneficial to processors in some instances and detrimental in others; and
- detrimental to some producers.

The extent to which increased imports affected producers and processors depended largely on how the imports competed with domestic products. In some instances, imports appeared to contribute to reduced domestic production. In others (initially, at least), they appeared to complement U.S. production.

Consumers Benefited in Certain Instances from Restricted Price Increases

In competitive markets imports tend to place downward pressures on domestic prices. By increasing supplies, imports may limit price increases or reduce current prices. A typical pattern between import quantities and domestic prices, for commodities for which imports compete directly with the domestic product, is one where high domestic prices attract imports, which then curtail domestic price increases.

One example of this pattern is the effect on domestic prices of increased frozen concentrated orange juice imports from Brazil. According to a 1986 ITC report on frozen concentrated orange juice from Brazil, imports of frozen concentrated orange juice in freeze years act as a supplement to domestic supplies and may keep prices from being as high as they would be in the absence of imports.¹

As a result of the freezes in Florida in the early 1980s, the price of oranges rose from \$4.04 a box in the 1980-81 season to \$5.15 in 1982-83 and to \$5.75 in 1983-84. These prices made exporting to the United States more profitable for the orange juice industry in Brazil, and the volume of Brazilian frozen concentrated orange juice imports more than tripled between the 1980-81 and 1984-85 growing seasons. In the 1984-85 season the price peaked at \$7.10 a box and then fell 46 percent in 1985-86 to \$3.81 a box.

Questions Have Been Raised About Safety of Imported Produce

The rapid rise in fruit and vegetable imports has been accompanied by concerns about the safety of those imports. In particular, questions have been raised about (1) the extent to which crops containing pesticide residues exceeding U.S. standards have entered the country and (2) whether pesticides banned in the United States have been used on crops abroad, which have then been exported to the United States.

For example, the Natural Resources Defense Council, a national, nonprofit environmental organization, testified before the House Subcommittee on Health and Environment, Committee on Energy and Commerce, in December 1987 on the need for increased information on pesticide use in foreign countries. The Council stated that foreign growers may legally purchase and use pesticides whose residues may be illegal if that product is then imported into the United States. The Council noted, as an example, that DDT, banned in the United States in the early 1970s because of

¹Frozen Concentrated Orange Juice From Brazil, Determination of the Commission in Investigation No. 731-TA-326 (Preliminary) Under the Tariff Act of 1930, USITC Publication 1873, June 1986.

them) is key to understanding the import's effect on a particular industry. Further, how an import competes with a domestic industry is, we believe, largely related to the market structure of the affected commodity (e.g., whether the market is a growing or mature one).

Other factors that help determine an import's effect on the domestic industry relate to the reasons for the import's increase. For example, an import's effect is, we believe, more likely to be transient if the primary reason for increased supplies was adverse weather conditions or crop disease in the United States that raised the price of the U.S. product and created a temporary cost advantage for a foreign competitor. Fluctuations in the dollar's exchange rate may also create temporary advantages for certain imports resulting in increased volume. However, the domestic industry may rebound when weather or crop conditions improve or the dollar value falls against the exporting country's currency.

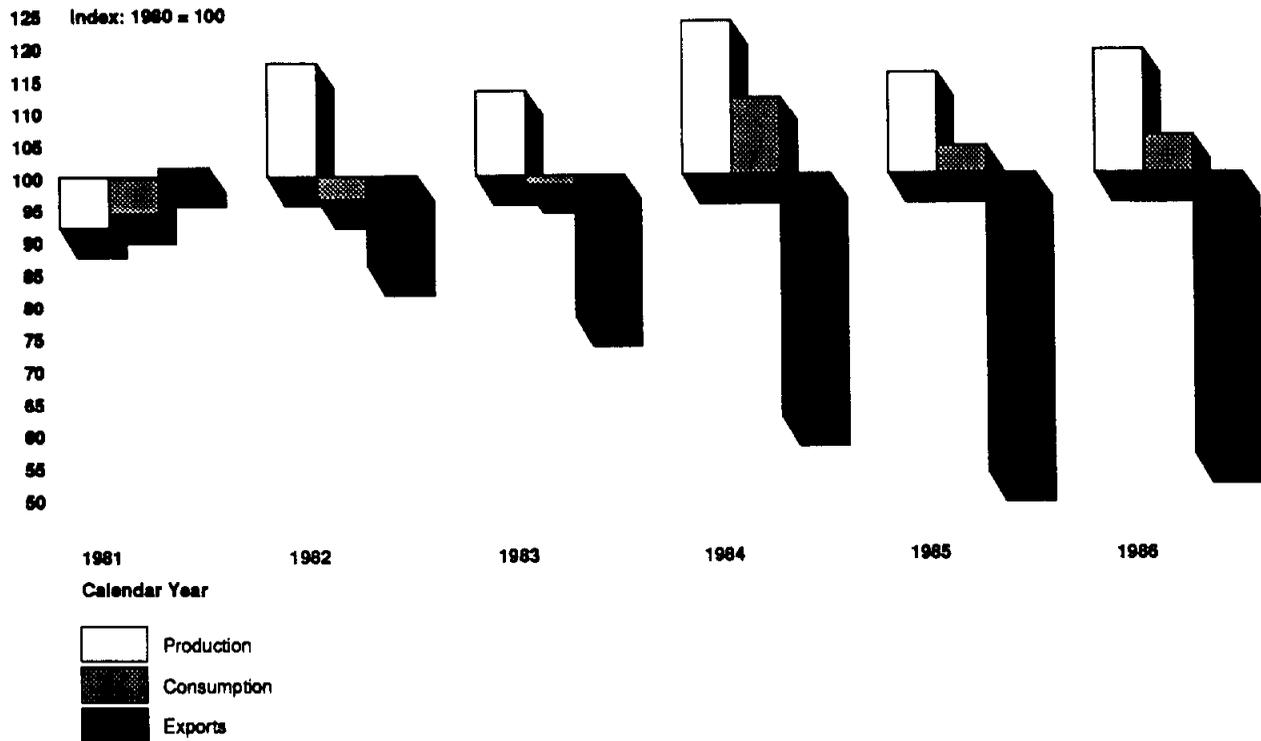
Industry Structure Is a Factor in Imports' Effect on Domestic Industry

An industry's structure is important in gauging an import's effect on that industry. Two relevant structural factors include the maturity of the industry and market timing (i.e., when products come to market). With regard to industry maturity, a growing industry, such as the fresh broccoli or table grape industry, is often better able to absorb increased imports; that is, consumer demand may be sufficient at least to maintain domestic prices and production levels. An industry with a more developed, or "mature," demand structure, such as the processed tomato or cling peach industries, may not be as able to accommodate added supplies at the same price.

Changes over time in import share (measured as the ratio of imports to domestic consumption) show trends in import penetration of U.S. markets. Rising imports are likely to have a significant domestic impact primarily in markets where the import share has increased over time, that is, where imports have penetrated the domestic market.² Figures 3.1 and 3.2 present import market share and other statistics on the processing tomato industry. Figure 3.1 shows the import shares for the processing tomato market from 1981 through 1986, relative to a 1980 base year (where the index has a value of 100). As shown, the import share in 1981 (about 4 percent) was about 175 percent higher than it was in 1980, and the import share in 1982 (about 10 percent) was about 600 percent higher than in 1980.

²Although import penetration has a stronger impact on domestic production when market demand is weak, this effect can be offset by other factors, such as increased export demand and changes in stock levels.

Figure 3.2: Trends in the U.S. Processing Tomato Industry, 1981-86, Relative to 1980 Levels



Source: Developed from data supplied by staff at ERS, USDA.

The significance of market timing is seen in cases where the domestic crop is grown only during certain periods and imports fill seasonal production gaps. In such cases, imports may complement domestic production and, therefore, initially at least, do not affect U.S. production. For example, grapes from California are available primarily from May through December, so Chilean winter grapes have not usually been directly competitive with domestic grapes. However, competition in the table grape market has developed in recent years as producers in both countries sought, through new technology, to expand their growing seasons in order to secure U.S. markets during periods of high prices, that is, December and April-May.

Reasons for Imports' Increase May Affect Impact on Domestic Industry

In section 2, we identified six factors contributing to the increase in fruit and vegetable imports from 1980 to 1986. Some of these factors (e.g., bad weather and crop disease and changes in the dollar's exchange rate) tend to be temporary conditions, while others (e.g., lower production costs abroad, an increasingly global

the last week of January 1986 to 60 percent overall for the 1987 winter season.

Rising Imports May Have Led to Structural Changes in Some Domestic Industries

The economic pressures created by rising fruit and vegetable imports (as well as shifting consumer tastes away from processed and toward fresh produce) may have contributed to structural changes, such as reductions and shifts in acreage and plant capacity, in some domestic fruit and vegetable industries. In addition, according to industry representatives, competition from some imports contributed to reductions in production and employment levels in some fruit and vegetable processing industries.

Industry representatives cited competition from processed tomato imports as a factor contributing to reductions in production and employment levels, as well as the related costs of switching products, jobs, and markets. According to the President of the California League of Food Processors, 34 processing plants (about 16 of which were tomato processing plants) ceased operating in California between 1977 and 1987, due, at least in part, to pressures from increased imports. About 31,000 employees were affected by the plant closings. Some of these plants later reopened or were purchased by other processors. In the short run, however, the total number of fruit and vegetable processing plant employees in California declined from 92,700 in August 1980 to 77,900 in August 1986, according to California state employment statistics.

Although ERS statistics show that domestic acreage devoted to processing vegetables remained at about 1.3 million acres from the mid-1970s through 1986, domestic processing tomato crop acreage declined significantly between 1976 and 1986. As figure 3.3 shows, harvested processing tomato crop acreage in California (which grew almost 90 percent of the nation's processing tomato crop in 1986) fell 28 percent from 1975 to 1986 (from about 300,000 acres to 215,000 acres).

- When imported concentrate prices are favorable, the processor can realize increased profits through increased use of imports vis-a-vis the domestic product.
- Imported concentrate provides a low-cost substitute for fruit solids. Substitution allows processors to divert more of their raw product to higher profit items (e.g., dried apples), while still retaining shelf space for apple juice with a blend of domestic raw product and imported concentrate.
- Imported concentrate can be blended with the domestic raw product to maintain consistent quality and flavor.
- Processors can adjust their capital investments more effectively with additional volume obtained from imported concentrate.

Because of these benefits, the cooperative opposed imposing tariffs or quotas on apple juice imports.

INCREASED IMPORTS GENERALLY BENEFITED
DOMESTIC FRUIT AND VEGETABLE DISTRIBUTORS

Distributors appear to have generally benefited from increased imports in the form of high sales and profits. Increased access to imports provided domestic distributors with greater supplies (by providing greater variety) and with greater market stability (by providing year-round supplies).

According to a major U.S. marketer of Chilean grapes, importers of Chilean table grapes have tended to employ professional marketers year-round, which has added stability and continuity to grape marketing. The marketer added that the sale of larger quantities of grapes on a year-round basis contributes toward (1) lowering overhead costs per unit sold; (2) maintaining supermarket shelf space for the commodity; and (3) maintaining long-term, continuing relationships with supermarkets.

Increased imports of frozen orange juice concentrate from Brazil following the loss of groves in Florida in the early 1980s initially permitted Florida's processors and marketers to maintain supplies and thereby maintain market share in the competitive U.S. juice market. On the other hand, following a freeze in 1962, when there were no significant Brazilian backup supplies, shelf space and demand deteriorated significantly, according to a Florida state official. It took about 8 years to recover to the 1962 sales levels, the official said. This did not happen following the freezes in the 1980s because import supplies filled the gaps created by domestic shortfalls.

SECTION 4

OBJECTIVES, SCOPE, AND METHODOLOGY

In response to Representative Leon E. Panetta's October 22, 1986, request and subsequent agreements with his office, our review was to provide information on (1) the extent of the rise in fruit and vegetable imports for the period from 1980 through 1986, (2) the reasons for the rise in these imports, and (3) the impacts of the rise on various economic sectors. It was further agreed that we would provide a summary of legislative remedies available to assist industries hurt by import competition.

Our work was done primarily between November 1986 and November 1987, in Washington, D.C., California, Florida, and Washington State. California and Florida produce most of the fruits and vegetables grown in the United States; Washington State is a major apple-growing state. In addition, we visited Mexico, where we met with U.S. Embassy officials and representatives of producer and grower associations and of multinational food companies to discuss issues relating to product quality, plant sanitation, and pesticide controls.

To provide a basis for our analysis, we selected six commodities for detailed study--frozen concentrated orange juice, table grapes, broccoli, processing tomatoes, apples, and canned cling peaches. We selected these commodities because they were among the top five fruit and top five vegetable imports that had experienced the greatest increases. The information we obtained on these commodities is used in this briefing report to illustrate the reasons for increased imports as well as their impact in terms of short-term, direct effects on consumers, producers, processors, and distributors. It is possible that the longer term effects of increased imports may differ from the short-term effects.

We gathered information from studies prepared by U.S. government agencies, including the Departments of Agriculture and Commerce, the U.S. International Trade Commission, the Congressional Research Service, and the Office of the U.S. Trade Representative. Our information on foreign investment is based on data prepared by the Bureau of Economic Analysis of the Department of Commerce and by the Standard and Poor's Compustat Services, Inc. The Standard and Poor's data are based on information provided to the Securities and Exchange Commission by corporations. We also reviewed academic studies and studies by fruit and vegetable trade and grower associations.

We discussed fruit and vegetable import issues with officials from the agencies listed above; representatives of trade and grower associations representing each of the six case study commodities; with California, Florida, and Washington State

•

Who enforces

(1) Department of Commerce determines whether sales at less than fair value exist and (2) U.S. International Trade Commission (ITC) determines if the affected domestic industry has been or is threatened with "material injury" because of underpriced imports.

Same as for antidumping, except that the Department of Commerce determines whether a subsidy exists.

ITC can recommend an exclusion order or a cease and desist order, which becomes final only if the President does not disapprove it within 60 days.

Who may
initiate
investigation

Department of Commerce or an interested party filing on behalf of a domestic industry producing a like product may petition for an antidumping investigation

Same as for antidumping

Anyone with sufficient information

Who enforces

ITC recommends appropriate relief to the President, who has complete discretion to accept, reject, or modify the recommendations within 60 calendar days. If the President takes action different than that recommended by ITC, or declines to act, the Congress may, within 90 legislative days, pass a joint resolution directing the President to proclaim relief recommended by ITC.

ITC makes recommendations to the President. Any action taken is entirely at the President's discretion. Secretary of Agriculture may recommend interim emergency relief to the President.

Who may
initiate
investigation

Industry representative (e.g., trade association, firm, union), President, U.S. Trade Representative, certain congressional committees, or ITC

Any interested party, by petitioning the Secretary of Agriculture to request a Section 22 investigation

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Law

Sections 201-203
of the Trade Act
of 1974, as
amended (19
U.S.C. 2251
et seq.)

Purpose

Provides domestic in-
dustries with tempo-
rary relief from inju-
rious imports for a
sufficient time to
adjust to import
competition.

Legal remedies

Relief may include
increased duties,
quotas, institution
of an orderly market
agreement, or a com-
bination of these
remedies.

Section 22 of
the Agricultural
Adjustment Act,
as amended
(7 U.S.C. 624)

Provides relief
where imports are
found to materially
interfere with a U.S.
price support program

Import quota or
import fee

STATUTORY PROVISIONS RELATED TO IMPORT RELIEF

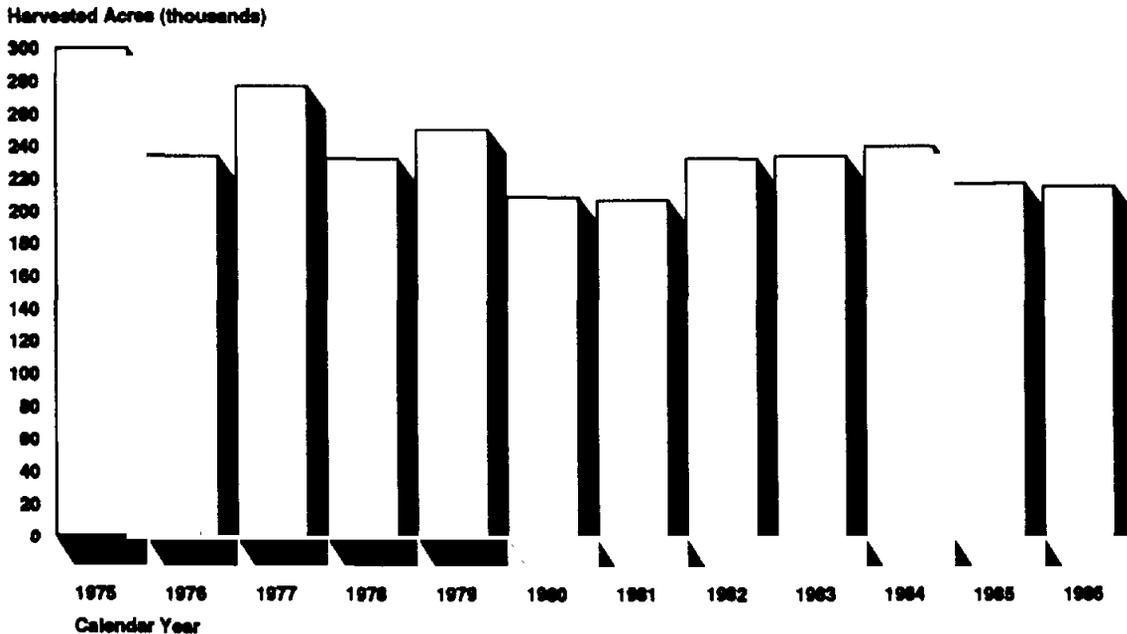
<u>Law</u>	<u>Purpose</u>	<u>Legal remedies</u>
Antidumping law (Subtitle IV of the Tariff Act of 1930, as amended, 19 U.S.C. 1673 <u>et seq.</u>)	Provides domestic industries with relief from price discrimination, i.e., foreign merchandise offered for sale at prices below domestic or third country prices for the same or similar merchandise	Additional duties may be levied to offset the foreign competitors' price advantage gained by underpriced sales.
Countervailing duty laws (Subtitle IV of the Tariff Act of 1930, as amended, 19 U.S.C. 1671 <u>et seq.</u> ; section 303 of the Tariff Act of 1930, as amended, 19 U.S.C. 1303)	Provides relief from subsidized imports	Additional duties may be levied to offset the advantage gained through foreign subsidies.
Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337)	Provides relief from unfair methods of competition and unfair acts related to importation and sale of foreign goods in the United States	An exclusion order covering all imports of the product from whatever source or a cease and desist order applying only to the proceeding and, thus, narrower in scope

agricultural officials; cannery union representatives; representatives from several California producer associations; and a number of individual vegetable producers and marketers from California.

We discussed the contents of a draft of this briefing report with USDA officials and their comments have been incorporated where appropriate. However, as Representative Panetta requested, we did not obtain official agency comments.

However, because of the increased volume of frozen concentrated orange juice from Brazil, a number of new marketers entered the competition. Brazilian juice is now being imported by reprocessing companies located in northeastern U.S. cities. Some dairy operations use their excess bottling capacity to bottle Brazilian juice, according to an industry official. Thus, imports may have contributed to increasing the number of reprocessors supplying the U.S. juice market.

Figure 3.3: California Processing Tomato Acreage, 1975-86



Source: California Crop and Livestock Reporting Service.

In the broccoli industry a different kind of structural impact occurred. According to domestic growers, they had to accept greater financial risks as a result of increased frozen broccoli imports from Mexico. In the past domestic growers relied on the frozen broccoli market to utilize excess supplies not demanded by the fresh market. But the increased supplies of Mexican frozen broccoli reduced the demand for domestically grown frozen broccoli, thereby increasing the financial risk that excess fresh supplies either would not be sold or would push prices down.

Processors Benefited From
Added Supplies in Some Instances

For some processors increased imports provided needed supplies during periods of domestic production shortfalls as well as increased flexibility in marketing their products. Apple juice processors, for example, have used imported apple juice concentrate to their advantage. According to a major U.S. grower-owned apple and pear processing/marketing cooperative, U.S. processors benefit from imported apple juice concentrate in the following ways:

- In case of crop failure, processors can protect their shelf space by supplementing the domestic product with imported concentrate.

agricultural industry, and demographic and lifestyle changes) tend to be more long-term condition. If increased imports of a particular commodity are due primarily to a temporary condition, such imports will likely have a less significant long-term impact on the domestic industry than if increased imports are due primarily to a more lasting condition.

Florida and Mexico's competition in the winter fresh vegetable market illustrates how temporary fluctuations in imported produce can result in declines and rebounds in the domestic industry. As discussed in section 1, Florida traditionally supplies most winter fresh vegetables in eastern U.S. markets, while Mexico dominates western markets. Both areas compete in the Midwest. However, if one supply area cannot meet the demand in its traditional market, supplies from the other area may come in temporarily, with producers in that area receiving a competitive advantage.

According to USDA reports, Florida suffered from damaging freezes in 5 of the 7 years between 1980 and 1986. These freezes reduced Florida supplies, which resulted in increased prices for winter produce, which in turn provided a competitive advantage to winter fresh vegetable growers in Mexico.³ During these periods producers in Mexico were able to increase their share of the eastern and midwestern U.S. markets.⁴

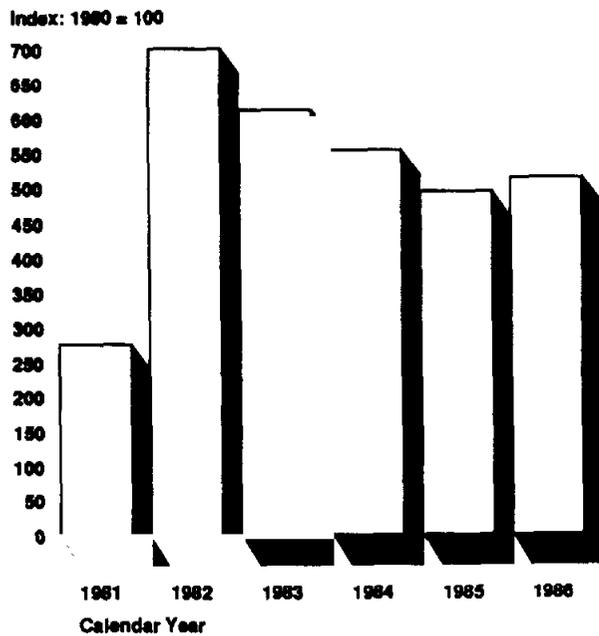
The market is quick to react to any production disruptions in Florida by purchasing Mexican-grown products to satisfy U.S. needs. For example, according to ERS estimates, Florida winter fresh vegetable shipments in the 1984-85 season dropped about 54 percent from the 42.4 million pounds recorded the week before the January 1985 freeze to 22.8 million pounds in a week in late March. During the same period winter fresh vegetable shipments from Mexico increased 30 percent and provided Mexico a record 90-percent share of the U.S. market between January and March.

However, Florida growers received increased revenues during the 1986 and 1987 seasons in the absence of a major freeze. During the winter 1987 season, Florida growers expanded acreage and received higher prices for their vegetables because of a freeze in Mexico in January 1987. In this instance, Mexico's share of the winter fresh vegetable market fell from 77 percent in

³Severe frosts in the major Mexican producing region of Sinaloa are rare. However, vegetable production in that region is frequently affected by extreme temperature variations and prolonged periods of rainy, cloudy, or cool weather.

⁴This situation is described in Vegetable Situation and Outlook Report, ERS, USDA, Aug. 1987 and Feb. 1986. The February 1986 report notes that Mexican market share is also affected by monetary exchange rates and government and industry policies.

Figure 3.1: Import Share of Processing Tomato Market, 1981-86, Relative to 1980 Level



Source: Developed from data supplied by staff at ERS, USDA.

Figure 3.2 shows indexes of domestic production, domestic consumption, and exports for the processing tomato industry. They indicate that a stagnant domestic market (consumption fell in 1981 and rose less than 6 percent over the 1980-86 period), combined with increases in the import market share (from about 1.4 percent in 1980 to over 10 percent in 1982, as shown in fig. 1.11) and falling exports, kept domestic production increases relatively modest; in fact, most of the increased production went to increased stocks. However, because of the many factors involved, it is difficult to determine the true domestic impact of the rising import shares from general data of this kind.

its carcinogenicity and environmental effects, was still legally being used in the 1980s in several foreign countries.

Findings regarding the inadequacies of U.S. controls over imported food safety have added to food safety concerns relating to imported foods. A 1986 GAO report, Pesticides: Better Sampling and Enforcement Needed on Imported Food (GAO/RCED-86-219, Sept. 26, 1986), concluded that the Food and Drug Administration's (FDA) monitoring program provided little protection against public exposure to illegal residues in imported food. According to the report, FDA annually sampled less than 1 percent of the approximately 1 million imported food shipments. Of the shipments sampled, 6.1 percent contained illegal residues, and some of these shipments may have been marketed and consumed rather than being reexported or destroyed. (By way of comparison, the violation rate for domestically grown food was 2.9 percent.)

INCREASED IMPORTS MAY HAVE CREATED
PROBLEMS FOR SOME U.S. FRUIT AND
VEGETABLE PRODUCERS AND PROCESSORS

Although inconclusive, information we obtained indicated that the impact of increased imports may have been detrimental to some fruit and vegetable producers (the individuals and companies growing produce and the workers they employ). According to producer association officials and individual fruit and vegetable growers, problems were created when fruit and vegetable imports captured greater shares of the domestic market and displaced or reduced U.S.-based production and employment. However, the information we obtained did not show a causal linkage between increased imports and reduced domestic production and employment industrywide.

For domestic processors, the impact of increased imports appeared to be mixed, depending in part on whether the imports came to the United States in a finished or unfinished form. Some processed imports, such as canned tomatoes and canned peaches, competed directly with domestic products and gained an increased share of the domestic market. Industry representatives cited competition from processed tomato imports as contributing to reductions in tomato processing plant employment levels. Other imports, however, such as frozen concentrated apple and orange juices, underwent additional processing before being marketed. These products provided U.S. processors with additional supplies during domestic production shortfalls as well as increased sourcing flexibility (i.e., the ability to obtain supplies from multiple sources).

Thus, impacts vary widely and it is difficult to generalize from any one of them. However, we believe that for both producers and processors, the degree to, and ways in, which an import competes with domestic products (e.g., displacing or supplementing

INTRODUCTION

The increased intensity of global competition for agricultural markets has left its impact on the various sectors of the U.S. economy, including consumers, producers, processors, and distributors. The rapid development of new technologies for producing and storing food products and the continual development of new agricultural products and varieties have meant that very few domestic markets are beyond the reach of foreign competition.

This section identifies the wide-ranging economic impacts resulting from the rise in fruit and vegetable imports from 1980 through 1986 and draws examples from specific commodities. Impacts are discussed in terms of their short-term, direct effects on consumers, producers, processors, and distributors. Over the longer term, some of the effects described here may be reinforced, or they may be offset. For example, in some instances, U.S. producers that are hurt in the short term by increased imports and forced to improve their productivity or develop new products may, in the longer term, be better able to compete.

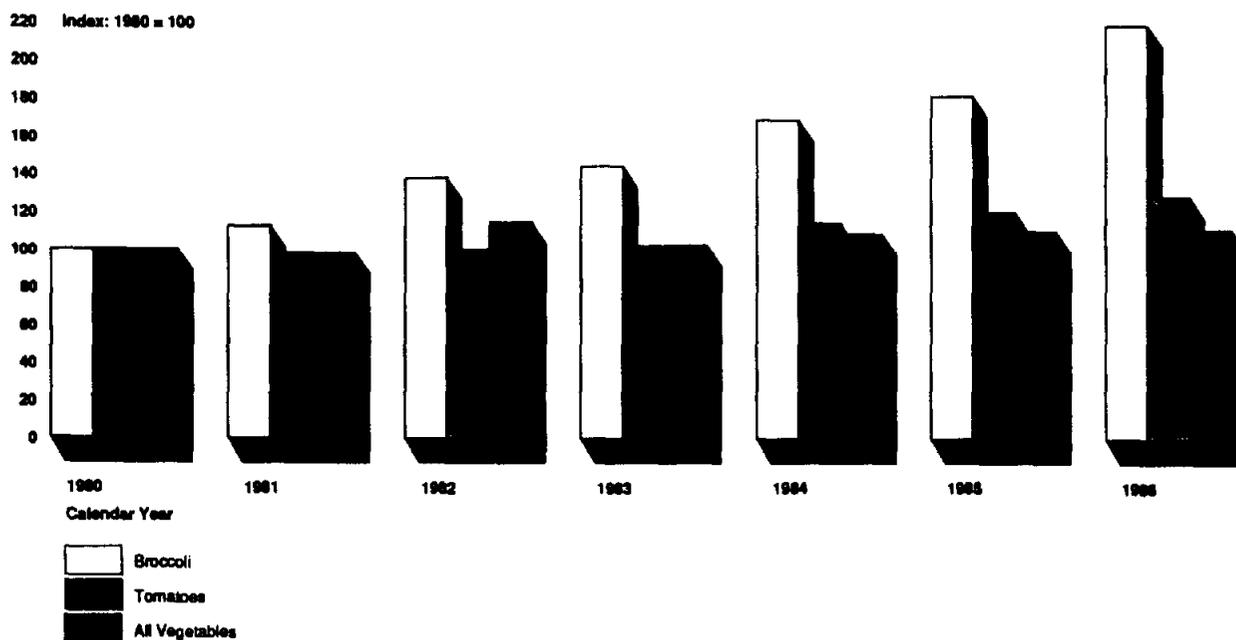
INCREASED IMPORTS GENERALLY BENEFITED U.S. CONSUMERS

Increased fruit and vegetable imports benefited domestic consumers by providing greater availability and variety of products and helping in some instances to keep retail prices down. Concerns have been raised, however, regarding the health and safety impacts of fruit and vegetable imports.

Consumers Benefited from Greater Product Availability and Variety

Rising imports during the 1980-86 period increased the availability and variety of fruits and vegetables on the domestic markets. Because of the differences in growing seasons, increased imports from some countries made more products available on a year-round basis. For example, Chilean grapes supplied the market during the winter months when domestic grapes were in short supply. In addition, some domestic growers began to grow new, exotic "designer" fruits and vegetables, such as radicchio (similar to Italian endive), chayote (a Mexican squash), jujube (a Chinese date), mamey sapota (a custard-like fruit that comes in two flavors), blue potatoes, pink mushrooms, purple artichokes, and even edible flowers.

Figure 2.12: Trends in U.S. Per Capita Consumption of Fresh Vegetables, 1980-86



Source: Vegetable Situation and Outlook Report, ERS, USDA, Aug. 1987.

Fruit consumption has also risen dramatically in recent years. According to an ERS paper presented at USDA's Annual Agricultural Outlook Conference in December 1987, U.S. per capita fruit consumption increased 2 percent in 1986 over the previous year and was projected to increase another 2 percent in 1987.¹⁵ The increase was primarily attributed to greater fresh fruit consumption. Per capita consumption of processed fruit (including frozen concentrated orange juice) decreased slightly in 1986. Among fresh fruits, grapes showed the greatest increase in per capita consumption, increasing from 3.7 pounds in 1980 to 7.2 pounds in 1986, about a 95-percent increase.

¹⁵Ben W. Huang, 1988 Outlook for Fruit and Tree Nuts, Annual Agricultural Outlook Conference, Outlook '88, session 16, ERS, USDA, Dec. 1987.

DEMOGRAPHIC AND OTHER CHANGES LED TO INCREASED DOMESTIC DEMAND FOR FRUIT AND VEGETABLES

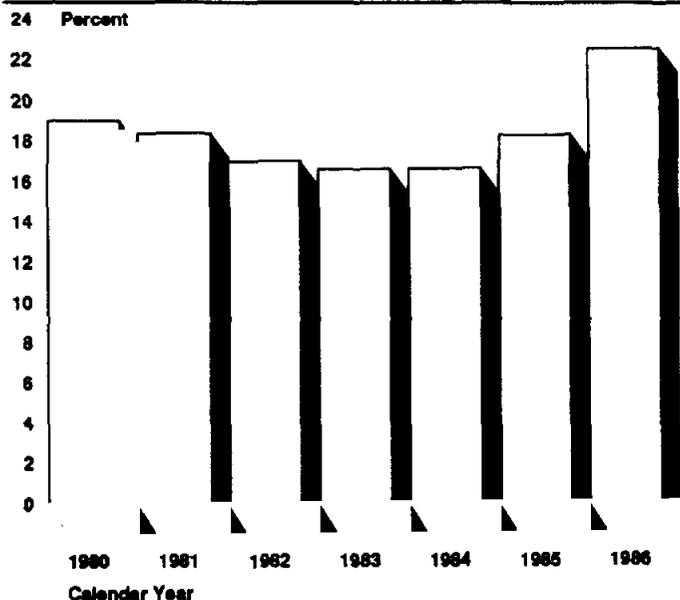
During the 1980-86 period a variety of demographic and lifestyle changes in the United States raised domestic consumer demand for fruits and vegetables, many of which are produced abroad. Among the demographic and lifestyle trends contributing to the rise in fruit and vegetable demand in the United States were the following:

- Changes in population. The median age of the population has risen, and the percentage of the population over 35 is projected to increase. According to ERS studies, the older people get, the more vegetables they eat.
- Changes in composition of labor force. The increased participation of women in the labor force led to higher household incomes. According to ERS studies, the demand for vegetables is more responsive to income changes than is the demand for other food items. In addition, greater participation of women in the labor force has contributed to greater demand for convenience in packaging and preparation (which increased demand for freezing vegetables over canned vegetables) and the popularity of salad bars-- all of which have enhanced fresh vegetable use.
- Influence of ethnic groups on food consumption patterns. The increase in the portion of the total population comprised of ethnic minorities (whose diets often include a higher proportion of fruits and vegetables) accounted for some of the increased consumption of vegetables. More importantly, the introduction and spread of ethnic cuisines increased the demand for a wider variety of fruits and vegetables and for novelty foods. This trend increased the demand for California specialty crops, such as baby carrots, but it also encouraged increased imports of such products as tomato products.

Another important factor contributing to the increased demand for fruits and vegetables in the United States was a growing concern and knowledge about health and nutrition. This development contributed to a marked increase in the per capita consumption of fresh fruit and vegetables. Retailers have responded to this increased demand by expanding produce sections and offering more products on a year-round basis. Much of the increased year-round demand was met by imports--primarily from Mexico.

The dramatic rise in domestic consumption of fresh broccoli provides a clear illustration of the increased demand for fresh

Figure 2.9: Foreign Assets of 10 Major U.S. Food Companies as a Percentage of Total Company Assets, 1980-86

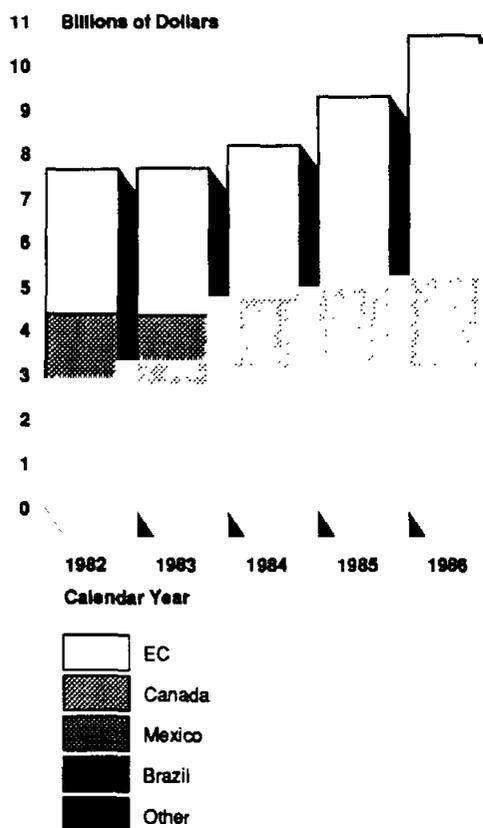


Source: Standard and Poor's Compustat Services, Inc.

One effect of the globalization of agriculture, as mentioned above, has been the substitution of domestic production with imports from U.S.-owned foreign subsidiaries. While much of the production from U.S. subsidiaries abroad is sold in the local foreign markets, some foreign subsidiaries of U.S. companies produce for export to the United States. Figure 2.10 shows the rise in imports shipped by foreign affiliates to their U.S.-based parent companies in the food industry from 1982 through 1985. Total imports rose steadily from \$430 million in 1982 to \$776 million in 1985--an increase of about 80 percent.

1982 through 1986. During this period, the largest increase was in investments in EC countries, accounting for over 70 percent of the total increase. In 1986 over half of the U.S. position abroad was in the EC. The U.S. food companies' direct investment position in Canada increased by 40 percent (over half of this increase occurred in 1986), by almost 19 percent in Mexico, and by almost 5 percent in Brazil during the 1982-86 period.

Figure 2.7: U.S. Food Companies' Direct Investment Position Abroad for Selected Countries and Regions, 1982-86



Source: Survey of Current Business, Bureau of Economic Analysis, U.S. Department of Commerce, Aug. 1986 and Aug. 1987.

Similarly, nearly all of the foreign direct investment position in the U.S. food industry is held by European firms. As figure 2.8 shows, EC investments accounted for 70 percent of the foreign investment position in the U.S. food industry in 1986. Together with the non-EC countries, European investments accounted for 95 percent of the foreign investment position in the U.S. food industry for that year.

efforts to replant the Florida orchards--a process that normally takes 7 to 10 years to regain full production. In 1985 about 9 million nursery orange trees were destroyed by canker, and 757,000 replants had to be destroyed because of the disease, according to a 1985 Florida Department of Agriculture study.

These natural disasters boosted imports, as Florida processors supplemented low domestic supplies with imports from Brazil. With decreased domestic supplies replaced by increased imports, Florida processors were able to provide steady supplies to their customers while the Brazilians expanded their market share.

GLOBALIZATION OF AGRICULTURE WITH EXPANDED INTERNATIONAL FLOWS OF COMMODITIES AND CAPITAL

The recent trend of rising fruit and vegetable imports may be viewed as part of a broader, more fundamental shift toward the globalization of agriculture. This trend has been characterized by increased flows of capital and commodities across national boundaries and by increased agricultural production worldwide. World agricultural output expanded greatly in the 1980-86 period, fueled by accelerated improvements in technology, government export subsidies and pricing policies, and increased emphasis on agricultural self-sufficiency in developing countries. Countries that were once net agricultural importers became net exporters.

Additionally, developing countries faced with economic problems began to import fewer agricultural goods than in the past. Some countries whose export markets grew in the 1980s (e.g., Chile and Mexico) have climates that allow production of certain crops during times when production in the United States is limited or nonexistent. In such instances, increased imports filled domestic seasonal production gaps.

As large multinational corporations play a greater role in U.S. agricultural production, the search for profitable business opportunities has been conducted on an increasingly global basis. Lower operating costs abroad, the need for multiple, year-round supply sources and markets, and in some cases concerns about product quality have led some U.S. firms to establish production and/or processing operations abroad that produce for U.S. as well as for foreign markets.

- An important characteristic of the globalization process has been that it involves increasing inward as well as outward foreign investment (or capital flows). While U.S. firms increase their agricultural investments abroad, foreign-owned multinational corporations are investing in U.S.-based agricultural operations. In fact, during the 1982-86 period, foreign firms invested in U.S. food production at a slightly greater rate than U.S. food firms invested in operations abroad. Figure 2.6 contrasts the rise in

- Subsidized credit. The Brazilian federal government offered subsidized credit for financing production expenses, such as those for fertilizer, pesticides, labor, and machinery operation. Loans for fertilizer purchases were interest free. Subsidized credit was also available to processors to finance (1) new factory equipment and (2) production for export. In 1979, for example, a Brazilian Central Bank Resolution was passed providing financing for these purposes at an annual interest rate of 8 percent; commercial rates at the time were around 50 percent.
- Assistance in establishing prices for oranges. The Brazilian federal government and several state governments worked with growers and processors to establish "on tree" prices for oranges bought by the processing industry. The purpose of these prices was to ensure growers a fair return for their fruit.
- Research and extension programs. Government funding supported a number of research and extension programs aimed at improving citrus cultivation, production techniques, and fruit quality, as well as an extensive program to eradicate citrus canker, a bacterial disease affecting citrus trees.
- Duty-free import of factory equipment. The Brazilian government allowed duty-free entry of all factory parts and equipment for citrus processing plants, provided these items were not produced domestically. This benefited Brazilian processors because much of their machinery and parts were not available locally.

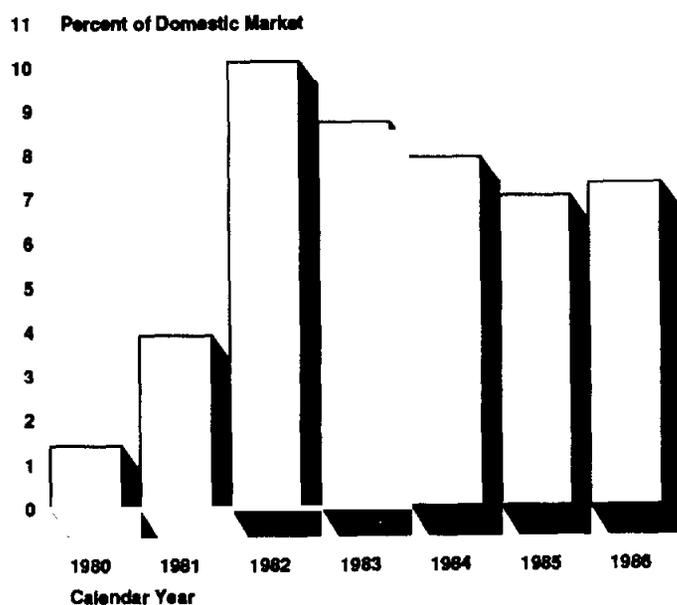
In 1983 ITC determined that the U.S. frozen concentrated orange juice industry was threatened with material injury by frozen concentrated orange juice imports from Brazil, which the Department of Commerce found to be subsidized by the government of Brazil. To offset the subsidies, the Brazilian government agreed to impose an export tax on frozen concentrated orange juice exports to the United States.

BAD WEATHER AND CROP DISEASE ALLOWED IMPORTS
TO GAIN Footholds IN SOME U.S. MARKETS

Bad weather and crop disease in the United States also played a role in the rise of certain commodity imports by creating shortages in the level of domestic production. These shortages and the price spikes they generated allowed foreign imports to gain an increased foothold in some U.S. markets. In this way, chance events, such as freezes or blights, gave importers access into U.S. markets.

However, as shown in figure 2.4, the processed tomato imports' share of the domestic market increased from about 1.4 percent in 1980 to over 10 percent in 1982. Following 1982, the import share declined as a result of high domestic supplies. According to industry representatives, the increase in processed tomato imports was largely due to the EC's large subsidies of tomato exports. In 1980, in response to a petition filed by the Cannery League of California, the U.S. International Trade Commission (ITC) determined that the U.S. tomato industry was not materially injured or threatened with material injury because of processed tomato imports from the EC.

Figure 2.4: Processed Tomato Imports as a Percentage of U.S. Market, 1980-86

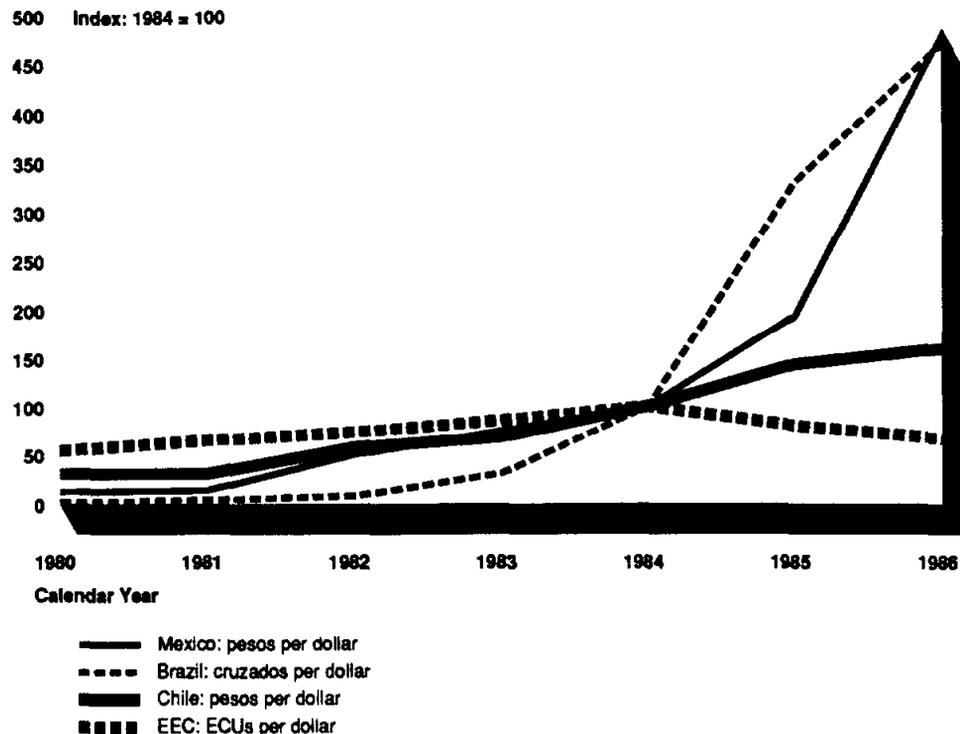


Source: Developed from data supplied by staff at ERS, USDA.

Production subsidies were an important element of EC competition for the U.S. tomato market. According to research by the University of California Cooperative Extension reported in 1986 in An Update of Global Processing, Tomato Production and Trade, and earlier reports, most EC tomato products do not appear to have been cost competitive with U.S. products without substantial subsidies. Table 2.2 compares the 1985 costs of producers in three EC countries with those of U.S. and other producers. The table shows the price received by the growers in foreign countries, the subsidies received by foreign processors (in the form of a reimbursement based on the processor's costs for raw tomatoes), the imputed cost to the processor (the grower price minus the subsidy received), the price received by California producers, and the difference between the foreign country and U.S. costs.

That is, the change in the real value of the dollar relative to these currencies is substantially less than that suggested by the figure, because much of the change is an adjustment for the high rates of inflation in these countries.

Figure 2.3: Exchange Value of the U.S. Dollar Against the Currencies of Major Fruit and Vegetable Exporters, 1980-86



Source: Economic Report of the President, Jan. 1987, and International Financial Statistics Yearbook, 1987, International Monetary Fund.

The impact that an exchange rate fluctuation has on U.S. import levels is affected by a number of factors, including changes in U.S. market prices, changes in market prices in the exporting countries, and exchange rates between the dollar and the currencies of other, competing exporters. The import effects of an increase in the dollar's value can be counteracted by a reduction in domestic market prices. For example, U.S. processed tomato prices dropped 16 percent from 1983 to 1984 while the dollar appreciated 9 percent. The net result was that imports tended to be discouraged rather than encouraged. Similarly, the import effects of an increase in the dollar's value (encouraging imports) can be offset by an increase in prices in the exporting country.

- For example, the high inflation rates in Mexico and Brazil (relative to the United States) tend to offset, to some extent, the effect of the devaluation of those countries' currencies relative

The extent of the cost differential shown in table 2.1 was reduced somewhat by a U.S. tariff of 34 cents a pound. In addition, an antidumping penalty of 1.96 percent of the import value of juice imported from Brazil was imposed by the U.S. Department of Commerce in early 1987.

In addition, transportation costs from Brazil to Florida ports decreased from 10 cents a pound in 1981-82 to 7 cents a pound since 1984-85 (as exporters shifted from shipping in 55 gallon drums to custom tanker ships built for frozen concentrated orange juice). During this period, Florida's transportation costs have not declined.

RISE IN EXCHANGE VALUE OF DOLLAR
CONTRIBUTED TO INCREASE IN IMPORTS

Imports into the United States tend to be encouraged when the value of the U.S. dollar rises relative to the currencies of the exporting countries. A rise in the dollar's value against the Mexican peso, for example, generally encourages imports from Mexico by making the imported goods less expensive for U.S. purchasers. Similarly, when the dollar value falls against the peso, imports from Mexico may be expected to decline.

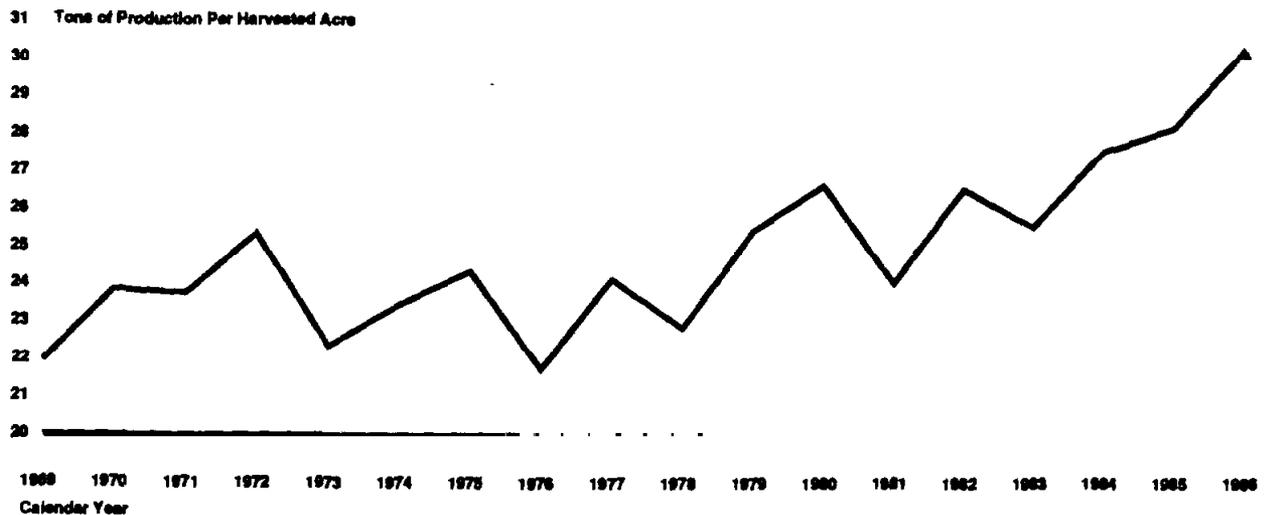
The dollar's rise against the currencies of major U.S. trading partners during the early 1980s helped make fruit and vegetable imports generally less expensive than commodities produced in the United States. The dollar's strength is often cited as a major reason for the decline in the U.S. balance of trade during the period. Figure 2.2 shows the trade-weighted index of the value of the U.S. dollar.⁵ The dollar rose against these currencies from 1980 through 1985, then fell in 1986.

⁵The trade-weighted index is an index of the combined exchange rates of the dollar against the currencies of U.S. trading partners, with the exchange rates weighted by volume of trade so as to give greatest importance to the exchange rates of the major U.S. trading partners.

Some U.S. Producers Have Acted to Reduce Cost Disadvantages

Some U.S. producers have acted to minimize their cost disadvantages, typically by increasing productivity through technological improvements. Domestic tomato producers and processors, for example, have used improved machinery, new tomato plant varieties, and more efficient means of transportation to reduce their unit costs. According to another University of California study, U.S. technology is providing yields of over 25 tons of tomatoes an acre, while foreign yields average 15.8 tons an acre.⁴ Figure 2.1 shows the improvements in yield per acre achieved by the California tomato industry from 1969 through 1986.

Figure 2.1: Yield Per Acre for California Processed Tomatoes, 1969-86



Source: California Crop and Livestock Reporting Service.

However, in some cases foreign competitors have also adopted improved technology while at the same time maintaining their labor cost advantage. For example, the rapid expansion of the Brazilian orange juice industry, and the concomitant increase in recent years of imported Brazilian frozen concentrated orange juice, occurred in part because U.S. producers and processors have not had a significant technological advantage over their Brazilian

⁴Kirby Moulton and Leon Garoyan, An Update of Global Processing, Tomato Production and Trade, University of California Cooperative Extension, May 1986.

INTRODUCTION

On the basis of our analysis of six major fruit and vegetable imports and our review of studies relating to fruit and vegetable imports overall, we identified six factors that we believe played a major role in the rise of fruit and vegetable imports from 1980 through 1986. Although one factor may be more relevant than others in explaining increased imports of a particular commodity, no single factor can fully explain the recent trend of rising fruit and vegetable imports overall. In addition, the six factors are often interrelated, making their independent effects difficult to identify. This section discusses each factor's effects on the trend in imports and draws on key commodity imports for illustrative examples.

LOWER PRODUCTION COSTS ABROAD

Lower production costs in some foreign countries have enabled some foreign producers to supply imports that can be sold at prices below those of U.S.-produced goods.

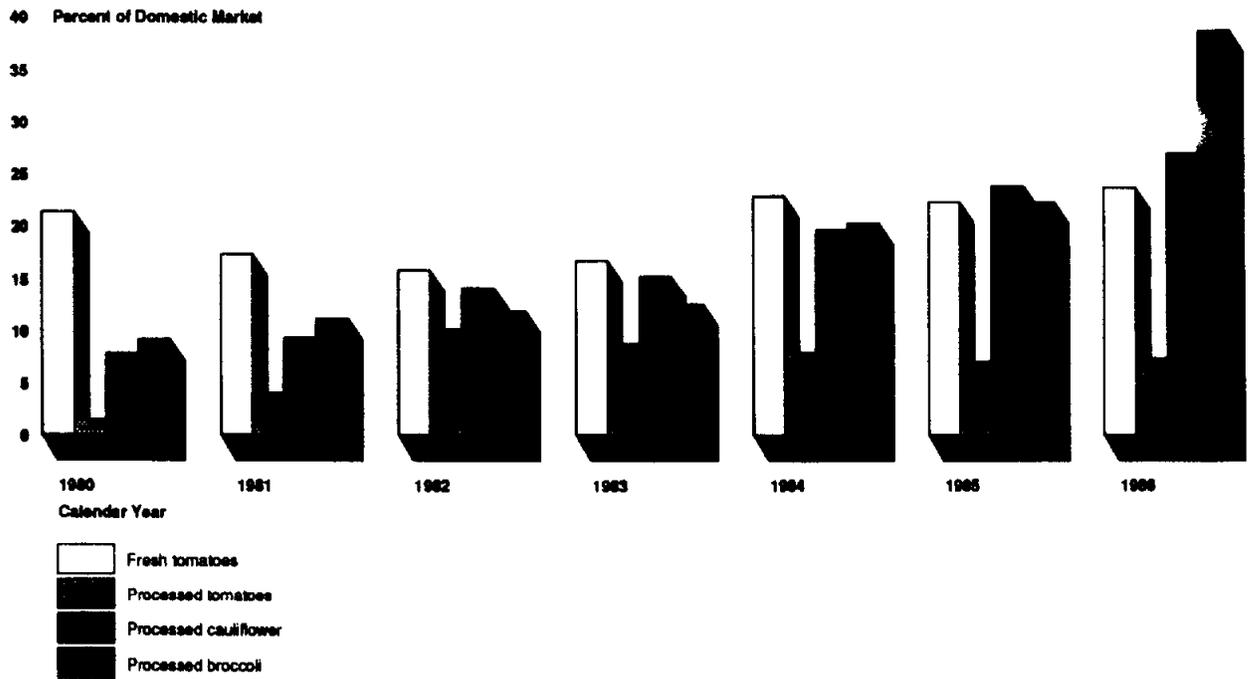
To determine the effect of production costs on increased fruit and vegetable imports, one should compare the overall costs of U.S. producers with those of their foreign competitors.¹ However, data limitations preclude meaningful comparisons:

- Production cost estimates are hampered by incomplete farmer records and difficulties in pricing family labor and allocating farm overhead. Furthermore, cost of production reporting is not required in the United States for the fruit and vegetable industries, as it is for USDA program commodities, such as wheat and feed grains, which receive U.S. government production and export subsidies.
- Production and/or processing methods differ among countries because of differences in the relative prices of inputs (e.g., labor and fertilizer) and in customs and standards.
- Production costs incorporate government subsidies of varying degrees and types, which further limits the usefulness of intercountry production cost comparisons.

However, although meaningful overall cost comparisons are not feasible, some data do exist on production cost differentials. One example is the often enormous differences in agricultural labor

¹The major costs incurred in agricultural production include variable expenses such as labor, fertilizer, seed, fuel, and repairs; fixed expenses, such as general farm overhead, taxes, insurance, and interest; capital replacement costs (e.g., costs of replacing equipment and structures); and land rent.

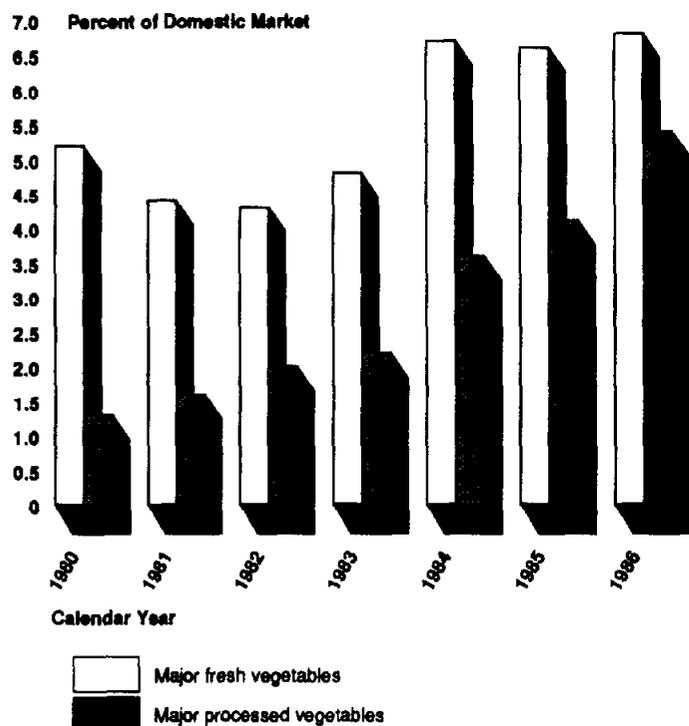
Figure 1.11: Import Shares of Selected U.S. Vegetable Markets, 1980-86



Note: Percentages are based on import and total domestic consumption quantities.

Source: Developed from data supplied by staff at ERS, USDA.

Figure 1.9: Import Shares of U.S. Fresh and Processed Vegetable Markets, 1980-86



Note: Major fresh vegetables include tomatoes, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, and onions. Major processed vegetables include broccoli, carrots, cauliflower, sweet corn, tomatoes, and snap beans.

Source: Developed from data supplied by staff at ERS, USDA.

Figures 1.10 and 1.11 show the import shares of selected U.S. fruit and vegetable markets, respectively. The import shares of all the fruits shown in figure 1.10 increased during the 1980-86 period, with frozen concentrated orange juice showing the greatest increase, from about 14 percent in 1980 to over 60 percent in 1984 and 1985 and almost 54 percent in 1986. Of the selected vegetables, processed (i.e., frozen) broccoli and processed (i.e., frozen) cauliflower showed the greatest increases in import shares—with the import share of processed broccoli rising from 9 percent in 1980 to almost 39 percent in 1986 and the import share of processed cauliflower rising from under 8 percent in 1980 to 27 percent in 1986. The import share of fresh tomatoes remained relatively stable, starting at about 21 percent in 1980 and ending at almost 24 percent in 1986.

and asparagus. According to a 1986 USDA report,⁷ Florida is traditionally the dominant supplier for the eastern United States, while Mexico is the dominant supplier for the West. Both Florida and Mexico compete in midwestern vegetable markets.

Similarly, Chile supplies most of the grapes marketed in the United States from January to April. Chile's growing season is basically the converse of California's, the major domestic producer of table grapes.¹

IMPORTS CAPTURED INCREASED SHARES OF SOME DOMESTIC MARKETS

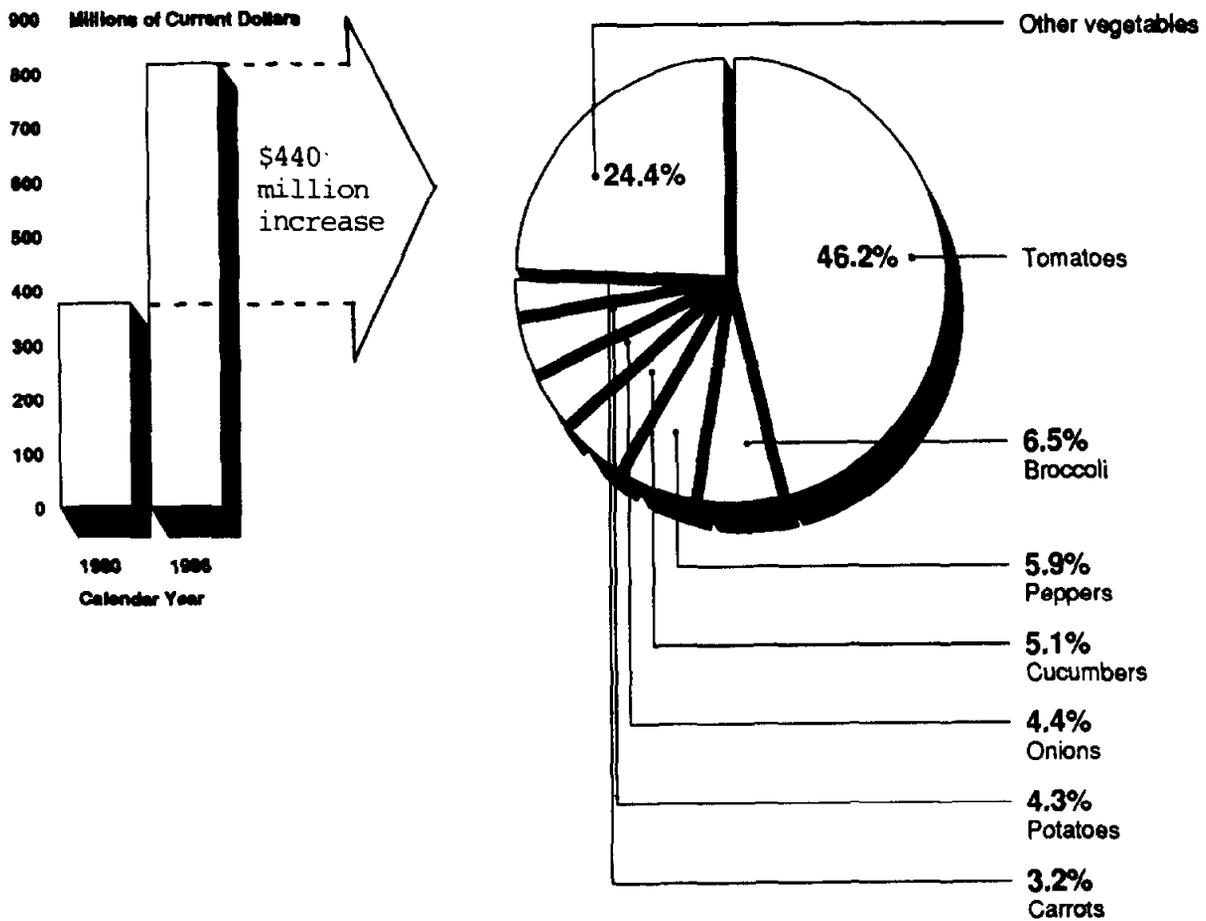
Not only did the value and volume of fruit and vegetable imports increase during the 1980-86 period, but import shares of major domestic fruit and vegetable markets also rose, although to varying degrees. For a particular fruit or vegetable, the import share provides an indication of the impact of that commodity import on the domestic market.

Figures 1.8 and 1.9 show the import shares of U.S. markets for major fruits and vegetables, respectively. The import shares of fresh and processed vegetables remained at relatively low levels, compared with fruit import shares.⁸ For fresh and frozen fruit, the import share remained at a significantly higher level (rising from about 26 percent in 1980 to over 33 percent in 1986) than the canned fruit share (which rose from about 5 percent to almost 13 percent). While the import share for processed vegetables began at a low level of about 1.3 percent in 1980, it rose to over 5.4 percent in 1986. The fresh vegetable import share remained relatively constant during this period, rising from about 5 percent to about 7 percent.

⁷Katharine C. Buckley, "Competitive Advantage in Producing Winter Fresh Vegetables in Florida and West Mexico," Vegetable Outlook and Situation Report, ERS, USDA, Feb. 1986.

⁸Processed vegetables include canned and frozen products.

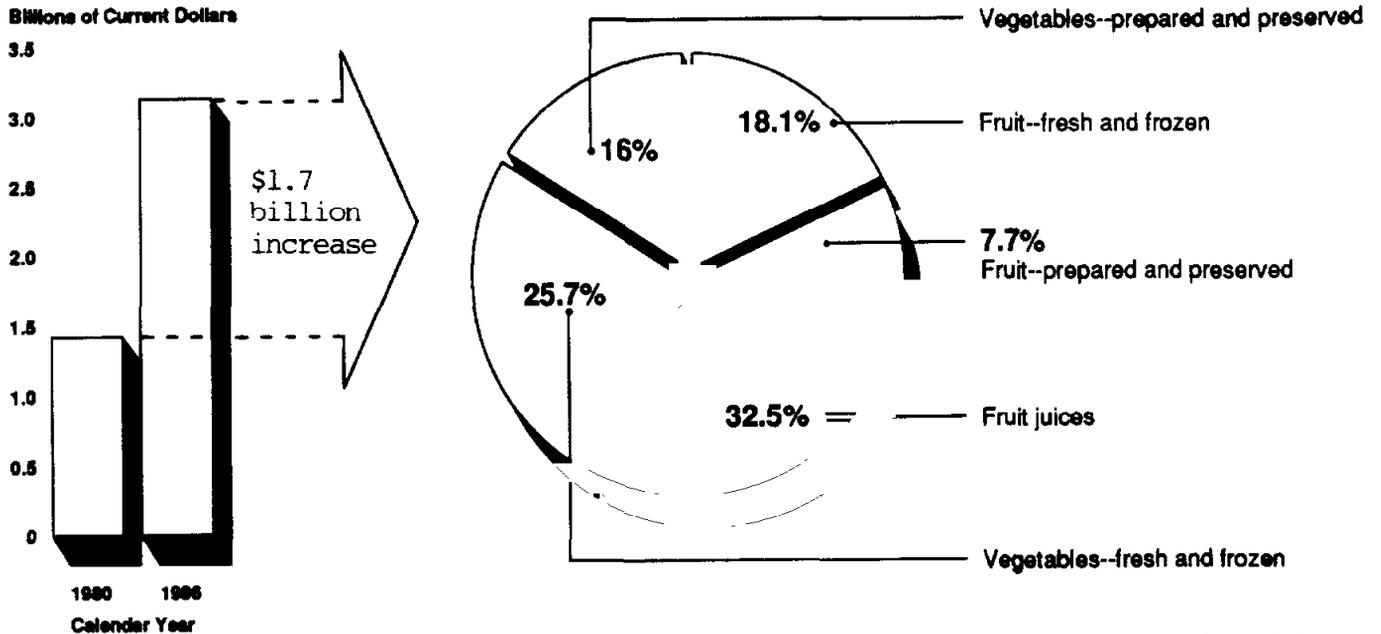
Figure 1.7: Increase in Fresh and Frozen Vegetable Imports, in Total and by Specific Commodities, 1980-86



Source: Developed from data in FATUS, Calendar Year 1981 and 1986 Supps., ERS, USDA.

Table 1.1 provides a statistical profile of selected imported commodities showing, for each commodity, the volume, current dollar value, import share of domestic market, per capita consumption, and major foreign source, for the years 1980 and 1986.

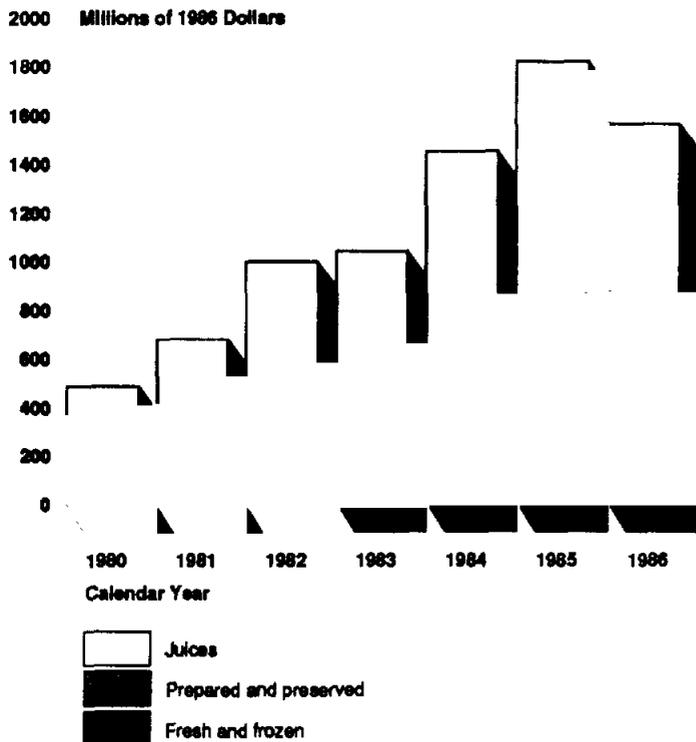
Figure 1.5: Increase in Fruit and Vegetable Imports, in Total and by Commodity Group, 1980-86



Source: Developed from data in FATUS, Calendar Year 1981 and 1986 Supps., ERS, USDA.

Figures 1.6 and 1.7 show the relative importance of specific imported commodities that accounted for the increase of imports in the fresh and frozen fruit and vegetable markets, respectively. Grape imports, which rose by almost \$123 million during this period, accounted for about 40 percent of the almost \$310 million increase in the fresh and frozen fruit import category. Fresh and frozen tomato imports rose by about \$203 million and accounted for 46 percent of the \$440 million increase in the fresh and frozen vegetable import category.

Figure 1.3: Value of Fruit Imports, 1980-86

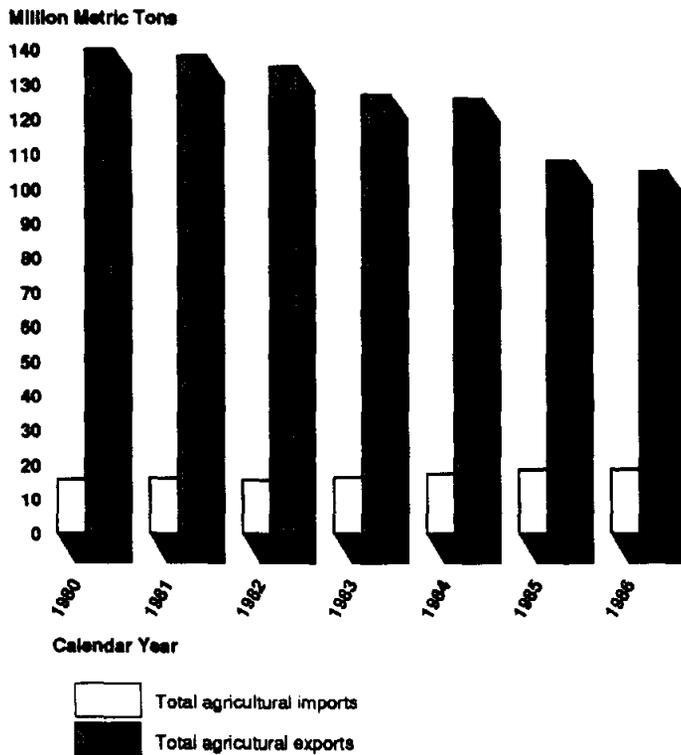


Note: Current values adjusted to 1986 dollars using value index of agricultural imports.

Source: Developed from data in U.S. Foreign Agricultural Trade Statistical Report, Calendar Year 1981 and FATUS, Calendar Year 1985 and 1986 Supps., ERS, USDA.

Vegetable imports more than doubled in value during the 1980-86 period, increasing from about \$738 million in 1980 to almost \$1.6 billion in 1986. In 1986 imports of prepared and preserved vegetables were roughly equal to those of fresh and frozen vegetable imports; however, the latter category increased more rapidly than the former from 1980 through 1986, with imports of fresh and frozen vegetables rising over 150 percent, compared with an increase of about 80 percent for prepared and preserved vegetables. (See fig. 1.4.)

Figure 1.2: Estimated Quantities of U.S. Agricultural Imports and Exports, 1980-86



Note: Imports increased moderately from about 16 MMT to about 19 MMT over the 1980-86 period. Estimates were developed using USDA's import and export quantity indexes, which are based on 40 and 46 major commodities, respectively, that account for 86 and 92 percent, respectively, of total U.S. agricultural imports and exports.

Source: Developed from data in FATUS, Calendar Year 1986 Supp.

Not all agricultural imports compete directly with domestic products. Traditionally, agricultural imports have been characterized as being noncompetitive (those items not produced in large quantities in the United States) or competitive (those items that compete in some form with commodities produced in the United States in commercial volume).

According to a paper presented at USDA's Annual Agricultural Outlook Conference in December 1986,⁴ the category of noncompetitive imports, which includes such products as coffee, bananas, cocoa, tea, and spices, comprises about 30 percent of the

⁴Jean Kinsey, Impacts of Imports on Food Prices and Choices, Annual Agricultural Outlook Conference, Outlook '87, session 23, Dec. 1986.

INTRODUCTION

In the 1980s United States agriculture has operated in an environment unlike that which existed in previous decades. Increasingly it has had to face the realities of a global economy and worldwide competition for markets. A basic aspect of this changed environment is that countries historically dependent on agricultural imports have become increasingly self-sufficient and, in some cases, compete with U.S. commodities in world markets. One result has been a decline in the U.S. agricultural trade surplus.

AGRICULTURAL IMPORTS ROSE WHILE AGRICULTURAL EXPORTS DECLINED

As figure 1.1 shows, from 1980 through 1986 U.S. agricultural exports declined from almost \$34 billion, the highest level ever, to about \$26 billion (in 1986 dollars).¹ During the same period imports rose from under \$15 billion to about \$21 billion (in 1986 dollars).² The combination of declining exports and rising imports resulted in the U.S. agricultural trade balance, adjusted for price changes and exchange rate fluctuations, declining from about \$19 billion in 1980 to about \$5 billion in 1986.

¹Current dollar amounts were converted to constant (1986) dollar amounts to adjust for price changes and exchange rate fluctuations, using the Department of Commerce's unit value indexes for agricultural imports and exports. The resulting constant dollar terms reflect volume rather than value trends.

²According to the U.S. Department of Agriculture (USDA), U.S. agricultural imports totaled about \$20.7 billion (1986 dollars) in 1987. Total U.S. exports for 1987 are estimated to be about \$29 billion.

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ABBREVIATIONS

ECU	European currency unit
EC	European Community
ERS	Economic Research Service
FDA	Food and Drug Administration
FATUS	<u>Foreign Agricultural Trade of the United States</u>
GAO	General Accounting Office
GATT	General Agreement on Tariffs and Trade
ITC	International Trade Commission
MMT	million metric tons
RCED	Resources, Community, and Economic Development Division
USDA	U.S. Department of Agriculture

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statistics on trends in agricultural imports. The fact sheet, Trends in Imports of Fruits, Vegetables, and Other Agricultural Products (GAO/RCED-87-177FS), was issued on September 29, 1987. Some of the data presented in the fact sheet are used in this briefing report. Additional information regarding the objectives, scope, and methodology of our review is provided in section 4.

USDA officials reviewed a draft of this briefing report, and their comments have been incorporated where appropriate. As you requested, we did not obtain official agency comments.

Copies of this briefing report are being sent to the Secretaries of Agriculture, Commerce, and the Treasury; the Director of the Office of Management and Budget; and other interested parties. If you have further questions regarding the information contained in this report, please contact me on 275-5138.

Major contributors to this report are listed in appendix II.

Sincerely yours,


Brian P. Crowley
Senior Associate Director

the 1980-86 period. Among the characteristics were the following:

- Although agricultural imports as a whole generally increased, fruit and vegetable imports rose more rapidly.
- Imports of some fruits and vegetables (e.g., frozen concentrated orange juice, fresh and frozen broccoli, fresh and processed tomatoes, and table grapes) accounted for a greater share of increased imports than others did.
- The import share (i.e., the percentage of domestic consumption supplied by imports) of both fruits and vegetables increased. Import shares for major fresh and frozen fruits rose from about 26 percent in 1980 to about 33 percent in 1986 and for major fresh vegetables, from about 5 percent to about 7 percent in that period.

REASONS FOR THE RISE

Section 2 identifies a number of economic and demographic factors that converged in the 1980-86 period to help bring about the rise in U.S. fruit and vegetable imports. The major factors include

- lower production costs abroad, which gave some exporting countries, such as Mexico and Chile, a cost advantage;
- the rise in the value of the U.S. dollar against the currencies of countries that export fruits and vegetables to the United States.
- foreign government actions, such as producer and export subsidies (which the United States also uses in the case of some export commodities);
- bad weather and crop disease in U.S. production areas;
- an increasingly global agricultural sector with expanded flows of commodities and capital across national borders and increased agricultural production worldwide; and
- demographic and lifestyle factors, such as an aging population and growing nutritional awareness, that increased consumer demand for fruits and vegetables, much of which was met by increased imports.
